Transportation 2035

State of Rhode Island

State Guide Plan Element 611

Report #116

Department of Administration

Statewide Planning Program

Long Range Transportation Plan

December 13, 2012

RHODE ISLAND STATEWIDE PLANNING PROGRAM

The Rhode Island Statewide Planning Program is established by Chapter 42-11-10 of the Rhode Island General Laws as the central planning agency for state government. The work of the Program is guided by the State Planning Council, comprised of state, local, and public representatives and federal advisors. The Council also serves as the single statewide Metropolitan Planning Organization (MPO) for Rhode Island. The staff component of the Program resides within the Department of Administration.

The objectives of the Program are to plan for the physical, economic, and social development of the state; to coordinate the activities of government agencies and private individuals and groups within this framework of plans and programs; and to provide planning assistance to the Governor, the General Assembly, and the agencies of state government. The Program prepares and maintains the State Guide Plan as the principal means of accomplishing these objectives. The State Guide Plan is comprised of a series of functional elements that deal with physical development, environmental concerns, the economy, and human services. This Plan, *Transportation 2035* constitutes one of the State Guide Plan's functional elements.

Program activities are supported by state appropriations and federal grants. Funding for the production of this long range transportation plan was provided principally by grants from the Federal Highway Administration and Federal Transit Administration. State of Rhode Island general appropriations to the Statewide Planning Program provided additional support. The contents of the document reflect the views of the Statewide Planning Program, which is responsible for the accuracy of the facts and data presented herein. The contents do not necessarily reflect the views and policies of the U.S. Department of Transportation. This publication is based upon publicly supported research and may not be copyrighted. It may be reprinted, in part or in full, with proper attribution of the source.

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ABSTRACT

TITLE: Transportation 2035: State Guide Plan Element 611

SUBJECT: Statewide, long-range surface transportation plan

DATE: December 13, 2012

AGENCY AND Statewide Planning Program

SOURCE OF Rhode Island Department of Administration

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ABSTRACT: This plan addresses Rhode Island's transportation needs over the next twenty plus years. This limited plan update is based on public participation, as well as federal and state agency collaboration. The Plan has been prepared to ensure compliance with the Safe Accountable Flexible and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) of 2005. The scope of the plan includes surface transportation for both passengers and freight, and connections to other modes. Revisions from the 2008 Plan include 2010 MPO recertification recommendations, demographic and travel trends, transportation financing, air quality analysis, detailed mapping for environmental justice analysis, and an updated Congestion Management Process.

PREFACE

This plan, *Transportation 2035* has two main purposes:

- It is a key element of the State Guide Plan, setting direction for state transportation policy and action. It complements elements dealing with land use, economic development, greenspace and greenways, and other related topics. It provides a framework with which local comprehensive plans must be consistent.
- It fulfills federal transportation planning requirements for statewide and metropolitan planning by providing a forum for public input, provides direction to the Transportation Improvement Program's (TIP) list of funded projects, and provides a basis for measuring adherence to air quality standards.

The Plan contains goals, policies, objectives and strategies for Rhode Island's transportation system over the next twenty plus years.

This Plan was prepared through the efforts of the Transportation Advisory Committee, Technical Committee, and State Planning Council whose members are listed on the subsequent pages, and staff from the Statewide Planning Program, Department of Transportation, and the Rhode Island Public Transit Authority.

The air quality conformity analysis performed for *Transportation 2035* was conducted by the consulting firm of Vanasse, Hangen, Brustlin, Inc., under contract to the Statewide Planning Program. Federal funding support was provided by the Federal Highway Administration and Federal Transit Administration.

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Part I Introduction & Background

PART ONE – INTRODUCTION & BACKGROUND

INTRODUCTION

The Rhode Island Statewide Planning Program, in cooperation with other agencies, prepares a long-range (twenty plus years) transportation plan that is part of the State Guide Plan. The State Guide Plan is a collection of plans and policy documents adopted by the State Planning Council that addresses the social, economic, and physical development of the state. The last transportation plan *Transportation 2030* was adopted in August 2008 and remained valid until August 2012. Federal regulations for ozone non-attainment areas, such as Rhode Island, require an update to the long range plan every four years thereby necessitating the need to complete an update to the transportation plan in 2012. In addition, the United States Department of Transportation (USDOT) requires a valid long range transportation plan in order to adopt a new Transportation Improvement Program (TIP) and to process TIP amendments. Amendments to the TIP can be common given the frequent changes in engineering practices, environmental issues, contracting issues, project readiness, and other factors that can require adjustments to project schedules and budgets. Therefore in order to maintain compliance with federal air quality regulations and to have the ability to fully amend the TIP, a limited Plan update entitled *Transportation 2035*, was completed in 2012, and the planning horizon was extended to the year 2035.

VISION STATEMENT

A vision is a future framework, a model that we can agree on and strive towards. It is at once a context for planning, the basis for program design, and reflective of the wishes of the state's citizens.

> *Our common vision recognizes transportation as a core function that threads through other elements of society. Transportation connects the state with the global and regional economies, the home with the workplace, the individual with the community, and all of us with one another. It must equitably benefit all communities, and must be reconciled with quality of life issues as vital as the air we breathe, the water we drink, and the preservation of our natural and historic heritage and beauty of the natural and built environments. It cannot exist independently of these concerns.*

THE REGIONAL CONTEXT

Rhode Island's location in the heavily populated region between Washington, DC, New York, and Boston has contributed to development of its marine, road, and rail transportation. Today, Rhode Island's transportation system exists as part of a larger system serving New England and the northeastern United States region. Rhode Island is part of the Amtrak Northeast Corridor and the I-95 highway corridor. This transportation infrastructure and other routes serve as a

conduit for traffic between New York, Boston, and Cape Cod. A regional analysis conducted by the Rhode Island Economic Policy Council documented the crucial importance of regional transportation linkages to Rhode Island's future economic strength, identifying the state's location along the major highway, high speed rail, and proximity to international shipping lanes as a strategic asset. As economic and transportation linkages have grown stronger within the region, commuting patterns have also shifted. Many Rhode Islanders are commuting to jobs in the metropolitan Boston area, and in southeastern Connecticut. Projects such as extension of commuter rail service and development of the intermodal train station at T.F. Green Airport are designed to capitalize on these strategic strengths.

ORGANIZATION FOR TRANSPORTATION PLANNING

Rhode Island, because of its size, is unique and efficient in its organizational structure for transportation planning. Planning activities are carried out on a consolidated statewide basis rather than at both the state and regional / metropolitan levels, as is the case in most other states. Federal regulations call for the Governor to designate a Metropolitan Planning Organization (MPO) as being responsible, along with the state transportation agency, for meeting requirements for highway and transit projects funded by the U.S. Department of Transportation. In Rhode Island, the MPO is the State Planning Council, whose staff is the Statewide Planning Program which is within the Rhode Island Department of Administration. The State Planning Council includes membership from state executive agencies, local government, and the general public. The State Planning Council coordinates planning and development activities in the state through the intergovernmental review process and development of the State Guide Plan.

The State Planning Council has two permanent advisory committees: the Technical Committee and the Transportation Advisory Committee (TAC). The Transportation Advisory Committee (TAC) is comprised of representatives of state agencies, local governments, regional organizations, transportation system providers and users, private organizations, and citizens that have an interest or expertise in transportation matters. This group meets monthly and is directly involved in preparing the transportation plan, Transportation Improvement Program (TIP), and Unified Planning Work Program. The TAC advises the State Planning Council on all surface transportation-related matters and also serves as the cornerstone for public involvement in the transportation planning process.

The Statewide Planning Program staff, as part of a state planning agency, integrates transportation with other planning issues, such as land use, housing, natural resources, and economic development through the review and approval of local comprehensive plans. Additionally, advanced planning tools are housed within the Statewide Planning Program, namely Rhode Island Geographic Information Systems (RIGIS) and the Statewide Travel Demand Model. The staff works cooperatively with the Rhode Island Department of Transportation (RIDOT), the Rhode Island Public Transit Authority (RIPTA), other state agencies, officials in 39 cities and towns, one Indian tribe, neighboring states and MPO's, multi-state and Canadian provincial groups, and federal agencies.

In addition, transportation planning is closely tied to air quality objectives, and the Long Range Transportation Plan and TIP both undergo a rigorous air quality conformity analyses. To ensure the State's air quality objectives related to transportation are achieved Statewide Planning works closely with the Rhode Island Department of Environmental Management (RIDEM) and the US Environmental Protection Agency (EPA).

PLAN APPROVAL PROCESS

In order to process TIP amendments and fully realize federal funds for transportation projects Statewide Planning developed a balanced yet aggressive timeframe and limited scope for the limited update for *Transportation 2035*. The limited scope was reviewed and supported by the USDOT's Federal Highway Administration (FHWA) and Federal Transit Administration (FTA), the TAC, Technical Committee, and State Planning Council in 2012. A full draft of *Transportation 2035* was presented to the TAC at their September 27, 2012 meeting. At the close of this meeting, the TAC voted to recommend that the State Planning Council/MPO schedule a public hearing on the draft *Transportation 2035*. The Technical Committee and the State Planning Council/MPO subsequently reviewed the draft *Transportation 2035* at their respective October 2012 meetings and approved it for the purpose of conducting a public hearing. Notice of the public hearing and opportunity to comment on the draft TIP was provided through advertisement in the Providence Journal, posting on the Statewide Planning website, and a direct mailing to the over 2,000 planning and transportation contacts in Statewide Planning's database.

Two informational presentations and public hearings on the *Transportation 2035* draft were held on November 14, 2012 at 9:00 a.m. and on November 15, 2012 at 6:30 p.m. in front of the TAC. The *Transportation 2035* draft was then revised by staff based on direction received from the TAC through the public hearing process and presented to the Technical Committee on December 7, 2012 and the State Planning Council December 13, 2012. The State Planning Council approved and adopted the final *Transportation 2035* on December 13, 2012.

PURPOSES OF THE PLAN

The transportation plan serves many purposes:

- It fulfills federal requirements for statewide and metropolitan planning under SAFETEA-LU.
- It provides a long-range framework for coordination among various modes and advancing projects in the Transportation Improvement Program.
- It sets state policy, to guide public and private decisions involving transportation toward the end of improving the economic, social, and environmental well-being of the state.
- As a State Guide Plan element, it is a basis for determining consistency of local comprehensive plans and other plans, programs, and projects with state policies.

SCOPE OF THE PLAN

SURFACE TRANSPORTATION PLAN

The State Guide Plan is mandated as a means for centralizing and integrating long-range goals, policies and plans of various branches of state government. The guide plan is not a single document but a collection of elements that have been adopted since the 1960's.

This Plan, which is one element of the State Guide Plan, considers surface transportation systems for both people and freight, and connections to air and water travel. It encompasses all modes of surface transportation: highway, bus, rail, paratransit, bicycle, pedestrian, and intermodal facilities. It also covers passenger ferry service receiving federal funding.

The following State Guide Plan elements also address transportation topics:

Element 155: Greenspace and Greenways
Element 640: State Airport System Plan
Element 651: Waterborne Passenger Transportation Plan
Element 661: Freight Rail Plan
Element 121: Land Use 2025

2012 UPDATE: *TRANSPORTATION 2035* SCOPE

From July 2011 to July 2012 staff engaged in a full comprehensive update to the state's FY 2013 – 2016 Transportation Improvement Program (TIP). The Transportation Advisory Committee (TAC), Technical Committee, and State Planning Council worked together with staff, municipal officials and the general public to focus the State's limited funding resources on those projects with the largest local, statewide and regional impact. The FY 2013-2016 TIP was adopted by the State Planning Council on July 12, 2012. Limited staff resources prevented a simultaneous update to the Long Range Transportation Plan. After consultation with State's FHWA and FTA delegation, it was agreed that this Long Range Transportation Plan update will be limited to the sections outlined in the table on the subsequent page, Scope of *Transportation 2035*, Limited Update 2012. The Rhode Island Statewide Planning Program will complete a comprehensive and full update to the Long Range Transportation Plan after the U.S. Department of Transportation (USDOT) has issued formal guidance on the development of long range transportation plans under Moving Ahead for Progress in the 21st Century (MAP-21). It is anticipated that the next update will be comprehensive and address all sections of the plan.

Scope of Transportation 2035, Limited Update 2012

Update Status	2012 Update	2012 Partial Update	Future Update
Part I - Introduction & Background			
Introduction		■	
Vision Statement			■
The Regional Context			■
Organization for Transportation Planning		■	
Purpose of the Plan			■
Scope of the Plan		■	
Background for Plan Update		■	
Performance Assessment of 2004 Transportation Plan		■	
SAFETEA-LU Planning Requirements			■
2010 MPO Recertification Recommendations	■		
State Planning Activities		■	
US DOT Strategic Goals			■
Demographic and Travel Trends		■	
Demographic Trends	■		
Travel Trends	■		
Part II - Transportation System & Needs Assessment			
Inventory of Facilities		■	
Highways		■	
Bridges		■	
Intelligent Transportation Systems		■	
Traffic/Safety Program		■	
Public Transit	■		
Bicycle	■		
Pedestrian		■	
Freight		■	
Intermodal	■		
Aviation	■		
Needs Assessment			■
Part III - Transportation Financing			
Financing	■		
Federal Highway Program Funding	■		
Federal Transit Program Funding	■		
State Funding	■		
Fiscal Constraint Analysis	■		
Part IV - Environmental Analysis			
Natural Resources and Environmental Mitigation			■
Air Quality		■	
Water Quality and Wetlands		■	
Wildlife			■
Energy			■
Community Impacts			■
Scenic and Historic resources			■
Dam Safety			■
Sea-Level Rise			■
Land Use Scenario Analysis			■
Environmental Justice Analysis		■	
Air Quality Analysis	■		
Part V - Recommendations			
Framework for Recommendations			■
Bicycle			■
Design			■
Economic Development			■
Emergency Response			■
Environment			■
Equity			■
Finance			■
Highway			■
Intermodal			■
Land Use and Travel Corridors			■
Pedestrian			■
Planning			■
Safety			■
Transit			■
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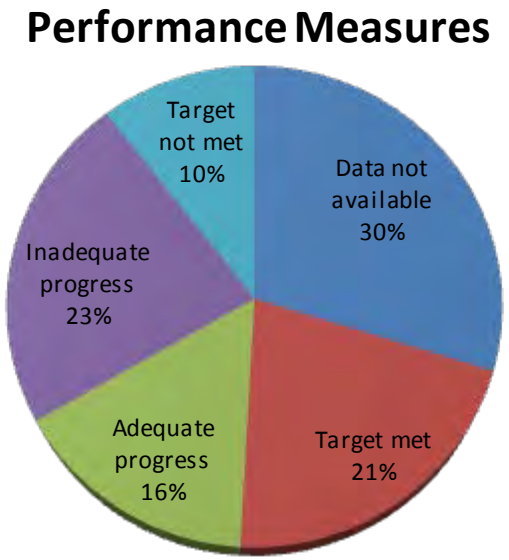
Appendix B - Survey Results			■
Appendix C - Transportation Funding Scenarios			■
Appendix D - Glossary, Acronyms, and Links			■
Appendix E - Public Review of the Plan	■		

BACKGROUND FOR PLAN UPDATE

This section discusses how the planning environment has evolved since 2004. Several significant actions that have a bearing on this plan update include: performance review of the 2004 Plan, the 2010 recertification of Statewide Planning (the MPO for the State of Rhode Island) by FTA and FHWA; recently adopted or ongoing planning activities at the state level; and new public participation activities. These are described below.

PERFORMANCE ASSESSMENT OF 2004 TRANSPORTATION PLAN



Transportation 2025 completed in 2004, was the state's first long range transportation plan that contained measurable objectives and performance measures. As a first step in updating *Transportation 2030*, a performance evaluation of the 2004 Plan was undertaken. Performance measures, which are generally quantitative, were reviewed. In some cases, data required to assess performance were not available. For instance, several performance measures rely on U.S. Census data that will not be available for several years. In other cases, operating agencies, such as RIDOT or RIPTA, were consulted for their most recent data. In several instances, data are collected differently now, and targets were reset based on new methods. The following designations were used:

- Data not yet available.
- Target met or surpassed. This is used when annual data is available and current or future year targets have been met.
- Adequate progress made toward target. This is used when the target is a future year, and annual data is available to track progress toward meeting the objective.
- Inadequate progress made toward target. This is also used when the target is a future year, and annual data is available to track progress toward meeting the objective.
- Target not met. This is used when the objective is for the current year, and annual data is available.

The results showed a mixed bag of progress made toward goals. Performance measures for this Plan have been revised accordingly. This Plan continues to establish performance measures which will be evaluated periodically.

BICYCLE

The state is accomplishing bike path construction at a pace that will meet targets. Bicycle mode share is not yet available.

ECONOMIC DEVELOPMENT

Two of RIPTA's three targets have been met – university recruiting for U-Pass Program (commuting indicator) and Providence-Newport Ferry ridership (tourism indicator).

EMERGENCY RESPONSE

Hurricane evacuation routes and Highway Functional Classification amendments are complete. Data is not available to quantify incident clearance time or intersection level of service.

ENVIRONMENT

Mode split (Census) data are not available. Water quality and emissions data also are not available. Gasoline consumption has increased, rather than decreased, but the baseline data could not be verified. It is recommended that that a new baseline be set in the next update of the Plan, and the target reset to be consistent with a highway measure (H.4.h) to slow the rate of growth of Vehicle Miles Traveled (VMT), rather than reduce VMT which is not considered to be realistic. The increase in greenhouse gas emissions has slowed. While that shows some improvement, it does not indicate adequate progress toward the goal.

EQUITY

Transportation spending objectives in low-income and minority districts have been met, but data is not readily available to measure the percentage of Family Independence Program families within ¼ mile of a transit route.

FINANCE

Several steps have been taken in the last two (2) years to address the issue of bond borrowing as a match for federal funds and to smooth the shard peak that had been anticipated in debt service over the next decade as a result of prior borrowing. These steps are detailed on Page 3-10 of this document. RIPTA's farebox recovery has increased and is moving in the direction of hitting the 35 percent target. Transportation spending (authorizations) has not kept pace with rising construction costs. RIDOT's financial system is not yet capable of tracking project cost overruns.

HIGHWAY

In 2004, the Interstate pavement condition (93 percent at "good" or better) came close to meeting the target, but National Highway System roadways and state system roadways did not fare as well, and did not come close to meeting targets. The percentage of bridges with structural deficiencies increased, rather than decreased, showing inadequate progress toward meeting targets. Again, mode split and incident clearance time data are not available. Congestion appears to have worsened, with interstate highways operating at posted speeds only 75 percent of the time, and hours of delay per person has also increased. The increase in VMT in 2002 and 2003 coincides with the previous two measures, although a slower rate of increase in 2004 is encouraging.

INTERMODAL

RIPTA has met the objective of 100 percent of the bus fleet with bicycle racks. Park and Ride lot usage is not available.

LAND USE AND TRAVEL CORRIDORS

Census data is not available to measure the urbanized area, although it should be noted that the Rhode Island State Planning Council adopted a state Land Use Plan in 2006, *Land Use 2025*, which establishes an Urban Service Area boundary. This boundary does not coincide exactly with the urban boundary, but the policies and strategies in the plan, if followed, should help in achieving this objective. Travel corridor studies have not been as numerous as hoped however corridor studies have been completed for Aquidneck Island and the Route 1 Corridor in South County.

PEDESTRIAN

In the years 2003 and 2004, sidewalk and ramp construction were not quite at the target level, but in 2005, the targets were exceeded. Mode split data are not available.

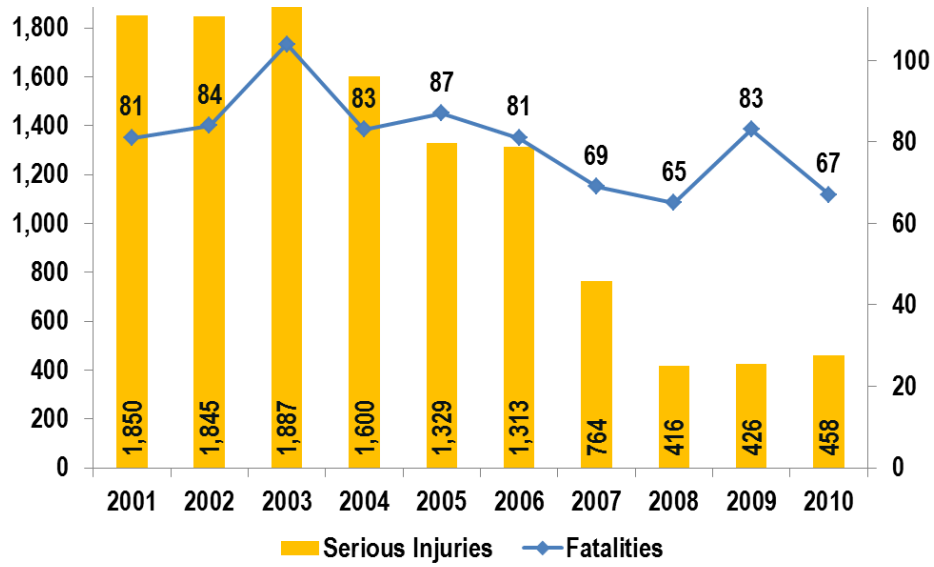
PLANNING

Statewide Planning's transportation planning program was re-certified in February 2010, meeting the performance target.

SAFETY

Rhode Island is moving progressively towards reducing traffic fatalities and serious injuries and making the roadways safer for all users. Between 2006 and 2010, traffic fatalities dropped 17 percent in Rhode Island. Since 2007, when Rhode Island changed the definition of a serious injury to an incapacitating injury, serious (incapacitating) injuries have dropped by 40 percent. The figure on the right depicts the trend of fatalities and serious injuries in Rhode Island from 2001 to 2010. The following is a brief synopsis of the five emphasis areas (alcohol-impaired driving, intersection and run-off-the-road, occupant protection, speeding, and young drivers) in the 2012 Rhode Island Strategic Highway Safety Plan and a summary of the extent of the problem since 2006.

Rhode Island Fatalities and Serious Injuries, 2001 – 2010



Alcohol-impaired driving crashes resulted in 94 fatalities from 2006 to 2010, which represents nearly 26 percent of all traffic fatalities in Rhode Island.

Between 2008 and 2010, 142 fatalities and 874 serious injuries occurred at intersection involved crashes. The numbers account for 67 percent of the total roadway fatalities and serious injuries in the State. During the same period, 128 fatalities and 510 serious injuries involved run-off-the-road crashes, which represent 42 percent of the statewide numbers.

In Rhode Island, there were 161 unbelted fatalities and 717 unbelted serious injuries between 2006 and 2010, which accounted for 44 percent of all traffic fatalities and 21 percent of serious injuries. There were 161 unbelted fatalities and 717 unbelted serious injuries between 2006 and 2010, which accounted for 44 percent of all traffic fatalities and 21 percent of serious injuries throughout the State.

Between 2006 and 2010, 141 speeding-related fatalities occurred on Rhode Island's roadways, accounting for 38 percent of overall traffic fatalities in the State. Data is not available on speed-related serious injury crashes due, in part, to a lack of personnel resources which impedes law enforcement from conducting crash reconstructions for speed-related serious injury crashes as they do for fatal crashes.

Between 2006 and 2010, crashes involving young drivers resulted in 82 fatalities and 883 serious injuries. These events represent 26 percent of the total fatalities and serious injuries in Rhode Island.

TRANSIT

This is the category that has shown the greatest success in the achievement of objectives, especially with respect to RIPTA's performance and ridership increases. While it is true that the hurricane devastation on the Gulf Coast in 2005 (along with other factors) caused a spike in gasoline prices, and a new incentive to use public transportation, RIPTA is also to be commended for bus maintenance and ADA fleet compliance. Mode split information will not be available until after the 2010 U.S. Census.

SAFETEA-LU PLANNING REQUIREMENTS

In 2005, after numerous extensions of TEA-21, the federal reauthorization bill, known as SAFETEA-LU was passed by Congress and signed into law. This act contains significant changes to the TEA-21 transportation planning provisions as outlined below. Plan update cycles have been extended from every 3 years to every 4 years.

- **Metropolitan and Statewide Plans - Environmental Mitigation:** Metropolitan and statewide transportation plans must include a discussion of types of potential environmental mitigation activities, to be developed in consultation with Federal, State and Tribal wildlife, land management, and regulatory agencies. *[An environmental mitigation consultation was held in 2007 with appropriate agencies and stakeholders. Mitigation measures have been established and are described in Part Four.]*

- **New Consultations:** MPOs and States must consult "as appropriate" with "State and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation" in developing long-range transportation plans. Additionally for the Long-Range Statewide Transportation Plan, States must consult with Federally-recognized Tribal agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation. *[Rhode Island's transportation planning process already provides for regular consultation and interaction with these agencies.]*

- **Consistency of Transportation Plan with Planned Growth and Development Plans:** Revises the previous planning factor related to environment to add "promot[ing] consistency between transportation improvements and State and local planned growth and economic development patterns." *[This plan uses the State's Land Use Plan as a basis for scenario analysis.]*

- **Transportation System Security:** SAFETEA-LU calls for the security of the transportation system to be a stand-alone planning factor, signaling an increase in importance from prior legislation, in which security was coupled with safety in the same planning factor. *[This plan (as did the 2004 plan) addresses security in the Emergency Response section, separately from Safety, consistent with this provision.]*

- **Operational and Management Strategies:** Metropolitan transportation plans shall include operational and management strategies to improve the performance of the existing transportation facilities to relieve vehicular congestion and maximize the safety and mobility of people and goods. *[A proposal for a statewide Access Management Program has been included as an appendix to this Plan.]*

- **Participation Plan:** MPOs must develop and utilize a "Participation Plan" that provides reasonable opportunities for interested parties to comment on the content of the metropolitan transportation plan and metropolitan TIP. Further, this "Participation Plan" must be developed "in consultation with all interested parties". This consultation requirement is intended to afford parties who participate in the metropolitan planning process a specific opportunity to comment on the plan prior to its approval. A participation plan must be in place prior to MPO adoption of transportation plans and TIPs addressing SAFETEA-LU provisions. FTA/FHWA particularly expect this to encompass governmental and nonprofit organizations that receive Federal assistance from a source other than the Department of Transportation to provide non-emergency transportation services and recipients of assistance under section 204 of title 23, U.S.C. *[A Public Participation Guide was developed and approved in 2007. Additionally, a brochure was developed in both English and Spanish and distributed widely throughout the State.]*

- **Visualization Techniques in Plans and Metropolitan TIP Development:** As part of transportation plan and TIP development, MPOs shall employ visualization techniques. States shall also employ visualization techniques in the development of the Long-Range Statewide Transportation Plan. *[Photographs, charts, and greatly enhanced mapping are used extensively in this plan.]*

- **Publication of Plans and TIP/STIP:** MPOs shall publish or otherwise make available for public review transportation plans and TIPs including (to the maximum extent practicable) in electronically accessible formats and means, such as the World Wide Web. States also shall use a similar approach for the Long-Range Statewide Transportation Plan. *[Statewide Planning has published plans and TIP's on our website for many years and will continue to do so.]*

- **Annual Listing of Obligated Projects:** SAFETEA-LU specifies that the development of the annual listing "shall be a cooperative effort of the State, transit operator, and MPO" and also shall include two new project types, "investments in pedestrian walkways and bicycle transportation facilities" for which Federal funds have been obligated in the preceding year. *[This list is available at www.planning.ri.gov/tip/7detail.pdf]*

- **Congestion Management Processes in Transportation Management Areas (TMAs):** Within a metropolitan planning area serving a TMA, there must be "a process that provides for effective management and operation" to address congestion management. Each TMA (with input from the FHWA Division Offices and FTA Regional Offices) should assess the extent that the TMA's existing CMS meets the new statutory requirements for a congestion management process and define a plan and schedule to implement this process. *[A proposed Congestion Management Process is included as an Appendix A to this Plan.]*

2010 MPO RECERTIFICATION RECOMMENDATIONS

Another significant planning action included in this plan update is the Metropolitan Transportation Planning Certification Review Report. This document contains findings from the February 2010 triennial review conducted by FHWA and FTA. The recommendations and commendations that are relevant to the long range plan are summarized below.

MPO STAFFING

***Recommendation*:** Examine the level of staffing in key positions within the Statewide Planning Program to determine adequacy of maintaining a high caliber of transportation planning. *[Several vacant and newly created positions within the Program have been filled between 2010 and 2012. A few positions remain vacant due to recent retirements and internal promotions. The remaining vacant positions are expected to be filled in 2012 and 2013.]*

MPO REPRESENTATION, COORDINATION AND CONSULTATION

Recommendation: Statewide Planning, RIPTA, and RIDOT should work together to more fully integrate public transit as part of regional multimodal systems planning. The agencies should also collaborate on a regional basis to create partnerships outside Rhode Island for long-term transit planning projects, such as high-speed rail. *[This item is actively being pursued by all agencies.]*

Recommendation: A mechanism to integrate public transit and regional multimodal systems planning is through the consolidation of FTA and FHWA planning funds into a single grant administered by FHWA or FTA. *[This activity has been accomplished by Statewide Planning in cooperation with RIDOT through a consolidated planning grant administered by FHWA.]*

CONGESTION MANAGEMENT PROCESS

Commendation: The Congestion Management Task Force (CMTF) and the Congestion Management Process (CMP) provide a structured and comprehensive means of evaluating causes of congestions and planning for access management.

Recommendation: The CMTF develop and apply performance measures to expand the significance and utility of the CMP. Performance measures should then be applied to examine alternatives and connect the CMP to long-term planning goals. *[The CMTF has developed and continues to track congestion performance measures including travel time reliability (average travel time, 95th percentile travel time, planning index, and buffer index), incident clearance time, crash rate, and Intelligent Transportation Systems (ITS).]*

FREIGHT PLANNING

Commendation: The Freight Advisory Committee was convened for the purpose of assessing and updating state freight planning goals, policies, and strategies in 2009. Their guidance successfully raised the profile of freight in Rhode Island.

Recommendation: Maintain the Freight Advisory Committee as a standing committee to guide future freight planning efforts and maintain a high level of activity and attention in this area, including TIP development. *[Statewide Planning maintains the State Rail Plan Advisory Committee, which includes both passenger and freight issues related to rail. Statewide Planning is also a core member of the newly created Freight Advisory Committee.]*

LAND USE & TRANSPORATION PLANNING

Commendation: For the superb coordination between transportation and land use planning with *Transportation 2030*, which is based on scenarios analyzed in *Land Use 2025* and identifies strategies for focusing development in urban areas and preserving land in rural areas.

Commendation: Administering the Planning Challenge Grant program as a means of implementing *Transportation 2030* and *Land Use 2025*. The program allows Statewide Planning staff to provide technical assistance strategically to communities to fund projects aligned with State priorities.

FINANCIAL PLANNING

Commendation: The Governor's Blue Ribbon Panel that examined funding for transportation, recognized the critical funding situation in Rhode Island, and worked proactively to identify new funding sources. The Federal team encouraged Rhode Island to make greater use of the Panel's conclusions in future transportation planning.

AIR QUALITY

Recommendation: The SPP should continue to work with the Rhode Island Department of Environmental Management (DEM) to submit Rule VIII, which outlines the process and criteria for State agencies to determine air quality conformity for transportation plans and projects, to the EPA in a timely fashion and no later than September 2010. *[Staff worked closely with RIDEM, RIDOT and RIPTA to update DEM's Air Pollution Control Regulation No. 49. This updated regulation has been approved by the State and the EPA. It will be incorporated into the State Planning Council's Rules of Procedure as part of a larger update expected in 2013.]*

STATE PLANNING ACTIVITIES

LAND USE PLAN

The State's land use plan was revised for the first time since 1989 and *Land Use 2025* was adopted in 2006. The plan looked at several different alternative growth patterns, one of which was called "Centers and Corridors" and was based on the Travel Corridor Planning Initiative that was undertaken by Statewide Planning in 2003. Other conceptual growth patterns were also analyzed. The preferred alternative is a composite of the alternatives and identifies an "urban service boundary" and potential growth centers outside of this urban area. The urban service area includes the metropolitan Providence region, other developed areas, and other areas that have public water and/or sewers. These are the same parts of the state that also have the best transit service.

See Map # 1-2 RI State Land Use Plan

The land use plan contains three key objectives that address transportation:

- 4E. Promote intermodal centers and greater reliance on transit. *[by maintaining stations, connections, and allowing greater density of development along transit lines].*
- 4F. Provide pedestrian connections through all centers and urban districts. *[through sidewalk investments and reconnected street grids]*
- 4G. Maintain the functional integrity of existing and planned roadways. *[primarily through effective land use and corridor plans]*

In order to show consistency with land use and development plans, three growth scenarios have been developed in the Travel Demand Model based on the Land Use Plan. This scenario analysis is further described in Part Four.

This transportation plan carries forward policies that are consistent with the urban services area and compact development principles. The same land use policies that strive to preserve open space and create vibrant (and more dense) urban centers and villages also are conducive to more effective and efficient use of public transportation and non-motorized modes. This in turn eases congestion and is less harmful to the environment.

HOUSING PLAN

As directed by the General Assembly, the cities and towns in Rhode Island have prepared plans to address the local shortages of affordable housing such that each municipality achieves 10 percent. The state has also adopted a Five-Year Strategic Housing Plan and has recently completed a map that identifies suitable locations for higher density development that are consistent with *Land Use 2025*. The Center for Neighborhood Technology has a website that identifies locations in the Providence – Fall River Metropolitan Area where combined housing and transportation costs are affordable (45 percent or less of median income), and only a small portion of Rhode Island (mostly in inner city areas) is considered as such.[1]

HURRICANE EVACUATION ROUTES

As recommended by the 2004 plan, hurricane evacuation routes have been identified through a joint RIDOT/RIEMA effort and in coordination with cities and towns. The routes have been mapped and posted on RIEMA's website. As a next step in producing a complete evacuation plan, evacuation times on the identified routes have been estimated using the Rhode Island Statewide Model (RISM). To date, there have been no recommendations for specific roadway improvements as a result of the Evacuation Plan. The project evaluation criteria used in the development of the Transportation Improvement Program allow extra points for projects on evacuation routes.

See Map # 1-3 Hurricane Evacuation Routes

FREIGHT PLANNING NEEDS ASSESSMENT

A Freight Planning Needs Assessment was completed by Statewide Planning as a technical paper in 2006 that provided an overview of multi-modal freight facilities in the state and a summary of local and regional planning efforts. The paper further identifies what additional steps that Statewide Planning and RIDOT could be taking to improve freight planning. Key recommendations include the designation of state points of contact at both agencies, and also exploring the possibility of folding Rhode Island's Freight Rail Plan into the long range surface transportation plan.

TRANSIT 2020 AND SPECIAL LEGISLATIVE COMMISSION ON TRANSIT

Much attention has been paid in recent years to the future of transit in this state. A Special Legislative Commission was established in 2006 to investigate funding issues. A group called Transit 2020, sponsored by the City of Providence, has been meeting to establish a new vision for transit in the Providence

[1] http://htaindex.cnt.org/map_tool

metro area. Both of these efforts included outreach efforts. In addition, a study was completed by the state Budget Office that surveyed people who do not use transit to find out why they choose not to. Findings and recommendations from these efforts have been referenced and included in this plan.

SAFE ROUTES TO SCHOOL

The Safe Routes to School (SRTS) program was established under SAFETEA-LU and provides the state with $1 million annually in funding for projects, both infrastructure (construction) and non-infrastructure activities (education, encouragement, law enforcement, and evaluation). RIDOT and Statewide Planning share responsibility for this program, with the state coordinator position being a member of the Statewide Planning Program staff. A multi-disciplinary steering committee was established and two rounds of project solicitations and awards have been held. The first round of projects awarded ten (10) SRTS programs in seven (7) municipalities and involved 30 schools. These projects are in various stages of development ranging from in-process of being implemented to completion. The second round awarded 12 programs in 10 municipalities, involving 16 schools. These projects are in the process of being implemented or will begin shortly.

COORDINATED PUBLIC TRANSIT-HUMAN SERVICES TRANSPORTATION PLAN (SECTIONS 5310, 5316, AND 5317)

RIPTA has been tasked with this planning effort (described below) as mandated by SAFETEA-LU. Statewide Planning, as the MPO, has been and will be actively involved, and recommendations from the Human Services Plan are included in this plan.

> As a condition for receiving formula funding under the following three FTA programs, proposed projects must be derived from a locally developed public transit-human services transportation plan: (1) Special Needs of Elderly Individuals and Individuals with Disabilities [49 U.S.C. 5310(d)(2)(B)(i) and (ii)]; (2) Job Access and Reverse Commute [49 U.S.C. 5316(g)(3)(A) and (B)]; and (3) New Freedom [49 U.S.C. 5317(f)(3)(A) and (B)]. The plan must have been developed through a process that included representatives of public, private, and non-profit transportation and human services providers, as well as the public. This new requirement reinforces the broadened list of entities to be involved in the MPO's Participation Plan (23 U.S.C. 134 (i)(5)(A) and 49 U.S.C. 5303 (i)(5)(A)), as described above. In preparing the local public transit-human service transportation plans, service providers seeking assistance under these programs should ensure full coordination with the applicable metropolitan and statewide planning processes.

STRATEGIC HIGHWAY SAFETY PLAN

Rhode Island's 2012 Strategic Highway Safety Plan update was recently completed by RIDOT and will lead the State toward zero deaths. Statewide Planning, as the MPO, was an active participant in the development of both the 2007 and 2012 SHSPs. Recommendations from both the 2007 and 2012 SHSPs are included in this Plan.

PUBLIC PARTICIPATION

A Public Participation Guide was adopted by the State Planning Council in 2007. This guide specifies the public participation requirements for federally required surface transportation planning documents, including the long range plan, transportation improvement program, and unified planning work program. As part of this effort, brochures for public distribution were developed in both English and Spanish that explain the planning process and direct the reader to additional sources of information, including staff resources.

A Transportation Open House was held at the Blackstone Valley Visitors Center on March 1, 2007. This location is co-located with a transit hub in Pawtucket and was designed to better reach transit-dependent populations. RIDOT, RIPTA, Statewide Planning, and the Office of Housing and Community Development had displays and staff on hand to answer questions. Multi-media presentations were shown every hour in the adjoining auditorium. A "TRANS-blog" allowed for posting of comments on the wall.

Statewide Planning, in conjunction with the University of Rhode Island, conducted special outreach to inner city high school students in Providence. Classroom lectures and exercises provided feedback on travel habits of younger people that are often left out of other public outreach activities.

In addition, a survey was administered by mail and website (SurveyMonkey) to determine travel behavior and public opinion on transportation issues. Over the course of one year, 135 responses were received. The survey instrument and results can be viewed in Appendix B.

In 2011, Statewide Planning was the recipient of a U.S. Housing and Urban Development (HUD) Sustainable Communities grant to create stronger and more sustainable communities in Rhode Island. As part of this HUD grant, Statewide Planning is developing strategies to better engage the public, particularly those traditionally underserved by the planning process, in its outreach efforts. It is anticipated that the strategies developed through the Sustainable Communities grant will be incorporated and utilized in the next Long Range Transportation Plan update.

U.S. DEPARTMENT OF TRANSPORTATION STRATEGIC GOALS

The U.S. Department of Transportation's (USDOT) Strategic Plan for Fiscal Years 2012-2016 sets forth the overall direction, and mission of the Department. The Strategic Plan provides a mission statement to describe the underlying purpose for Departmental activities, and identifies five strategic goals and one organizational goal that capture the most important outcomes influenced by the Department's programs. These goals, in addition to the goals in the Federal Highway Administration Strategic Plan (discussed in the following section) are guiding principles for other transportation plans.

MISSION

"The national objectives of general welfare, economic growth and stability, and the security of the United States require the development of transportation policies and programs that contribute to providing fast, safe, efficient, and convenient transportation at the lowest cost consistent with those and other national objectives, including the efficient use and conservation of the resources of the United States."

STRATEGIC GOALS

Safety: Improve public health and safety by reducing transportation-related fatalities and injuries.

State of Good Repair: Ensure the U.S. proactively maintains critical transportation infrastructure in a state of good repair.

Economic Competitiveness: Promote transportation policies and investments that bring lasting and equitable economic benefits to the Nation and its citizens.

Livable Communities: Foster livable communities through place-based policies and investments that increase transportation choices and access to transportation services.

Environmental Sustainability: Advance environmentally sustainable policies and investments that reduce carbon and other harmful emissions from transportation sources.

Organizational Excellence: Develop a diverse and collaborative workforce that will enable the Department to advance a transportation system that serves the Nation's long-term social, economic, security, and environmental needs.

FEDERAL PERFORMANCE OBJECTIVES

To assess implementation success of the Strategic Plan, the agency incorporates outcomes and performance measures as part of the Plan to in order to mark milestones and measure progress toward the objectives. A number of the outcomes and measures of the Department's Plan have relevance to Rhode Island's Ground Transportation Plan, and are included below, for reference.

Highway Safety

- Reduce transportation-related highway fatalities per 100 million vehicle miles traveled (VMT) to 1.03 by 2013.
- Reduce passenger vehicle occupant fatalities per 100 million VMT to 0.82 by 2013.
- Reduce non-occupant (pedestrian and bicycle) fatalities per 100 million VMT to 0.15 by 2016.

State of Good Repair

- Increase the percent of travel on the enhanced NHS roads with pavement performance standards rated good to 60 percent in 2016.
- Decrease the percent of deck area on enhanced NHS bridges rated structurally deficient to 7.4 percent in 2016.
- Decrease the backlog of transit capital asserts in need of replacement or refurbishment by 2 percent from the 2010 baseline by 2016.

Economic Competitiveness

- Maintain travel time reliability in urban areas as measured by a decrease in the Travel Time Index to 1.19 in 2016.
- Maintain travel time reliability in freight significant corridors at or below 15 percent in 2016.

Livable Communities

- Increase the number of States with policies that improve transportation choices for walking, wheeling, and bicycling from 22 in 2011 to 27 in 2016.
- Increased access to convenient and affordable transportation choices.
- Improved access to transportation for people with disabilities and older adults.

Environmental Sustainability

- Reduction in transportation-related carbon emissions, improved energy efficiency, and reduction in use of oil in the transportation sector.
- Reduction in transportation-related air, water and noise pollution and impact on ecosystems.

Organizational Excellence

- Work with stakeholders to determine the skills, educational, and occupational requirements of the future transportation workforce and implement a national workforce development strategy to meet the demands of the rapidly changing 21st century transportation system.

The above has been taken from the USDOT Strategic Plan “Transportation for a New Generation”.

FEDERAL HIGHWAY ADMINISTRATION STRATEGIC GOALS

During 2008, the Federal Highway Administration (FHWA) released its multi-year Strategic Plan. This plan can be found at www.fhwa.dot.gov/strategicplan.pdf. The Agency adopted the new four-goal framework outlined in the Strategic Plan beginning in Fiscal Year (FY) 2009. The Agency developed and released an annual *Strategic Implementation Plan* (SIP) in advance of FY 2010 and FY 2011 that reflected the Agency's priorities in each goal area for the coming year. In March 2011, the Agency extended the existing FY 2011 SIP through the first 9 months of FY 2012 as part of the transition to an annual planning cycle from June 1, 2011, to May 31, 2012. This change in the planning cycle was made so as to coincide with the newly established Individual Performance Management cycle. *The Extended FY 2011-12 SIP*, also referred to as the *Performance Year (PY) 2012 SIP*, was updated in September 2011 to better reflect the Agency's current priorities through May 31, 2012. The *PY 2013 SIP* covers the planning period from June 1, 2012 to May 31, 2013.

The long-term FHWA Strategic Goals are:

- National Leadership - FHWA leads in developing and advocating solutions to national transportation needs.
- System Performance - The Nation's highway system provides safe, reliable, effective, and sustainable mobility for all users.
- Program Delivery - Federal Highway Programs are effectively and consistently delivered through successful partnerships, value-added stewardship, and risk-based oversight.
- Corporate Capacity - Organizational resources are optimally deployed to meet today and tomorrow's mission.

The objective of the plan update is to refresh the strategic planning framework based on current and emerging issues and trends in consideration of the need to refocus the Agency's post-Interstate vision and mission. As noted in the USDOT Strategic Plan section above, the goals in the plan are guiding principles in other transportation plans including this long range plan.

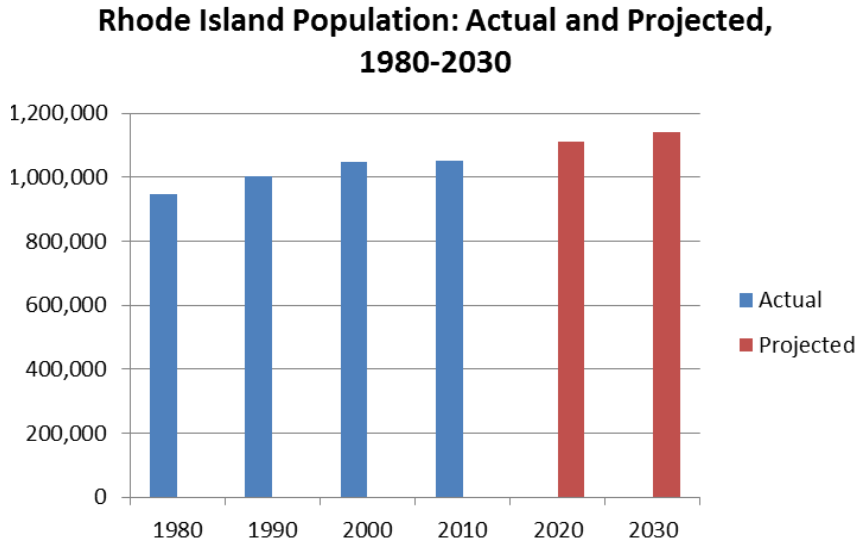
DEMOGRAPHIC AND TRAVEL TRENDS

This Plan provides some basic summary demographic data that have a bearing on future transportation needs. Population alone does not determine travel demand. Other factors, such as employment and vehicle registration are also considered.

DEMOGRAPHIC TRENDS

POPULATION GROWTH

Population growth in Rhode Island slowed during the last decade (0.4 percent) compared with the gains of the 1980s and 1990s (5.9 percent and 4.5 percent, respectively). Statewide Planning used 2000 Census data to develop the statewide population projections used in this plan which call for a modest rate of future growth (8.8 percent growth from 2000 to 2030). Given the very small actual population growth that actually occurred in 2010, new population projections will be an integral part of the next Plan update. Rhode Island's population has always been – and will likely continue to be – influenced by migration. Domestic migration from across the country and from beyond our national borders is expected to continue as a major factor in determining the State's population growth during the next decades.



Source: U.S. Census (actual); Rhode Island Statewide Planning (projected)

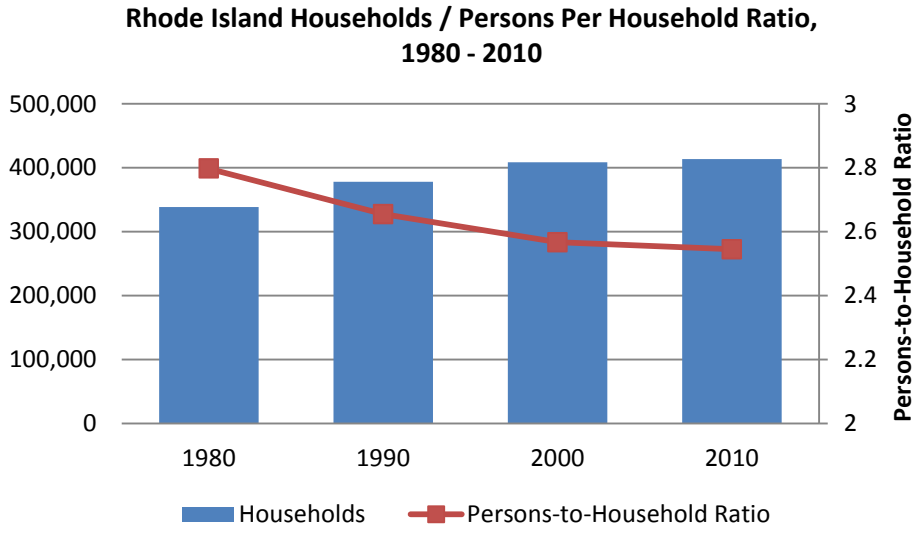
AGE STRUCTURE

Rhode Island's population is aging. During the next twenty years of the new millennium, the number of Rhode Islanders 65 years and older is projected to increase by more than half (53.9 percent), from 151,881 in 2010 to 233,749 in 2030. Representing 14.4 percent of the state's population in 2010, persons 65 and older will account for 20.5 percent of Rhode Island residents in 2030. One segment of the elderly population of significant interest because of increased costs associated with older age is the frail elderly (ages 85 and older), whose population is expected to increase by 5.4 percent between 2010 and 2030.

During those same years, the working age population (15-64) is expected to decline by 3.8 percent. Representing 68.3 percent of the population in 2010, this age group will decline to 60.7 percent by 2030.

HOUSEHOLDS

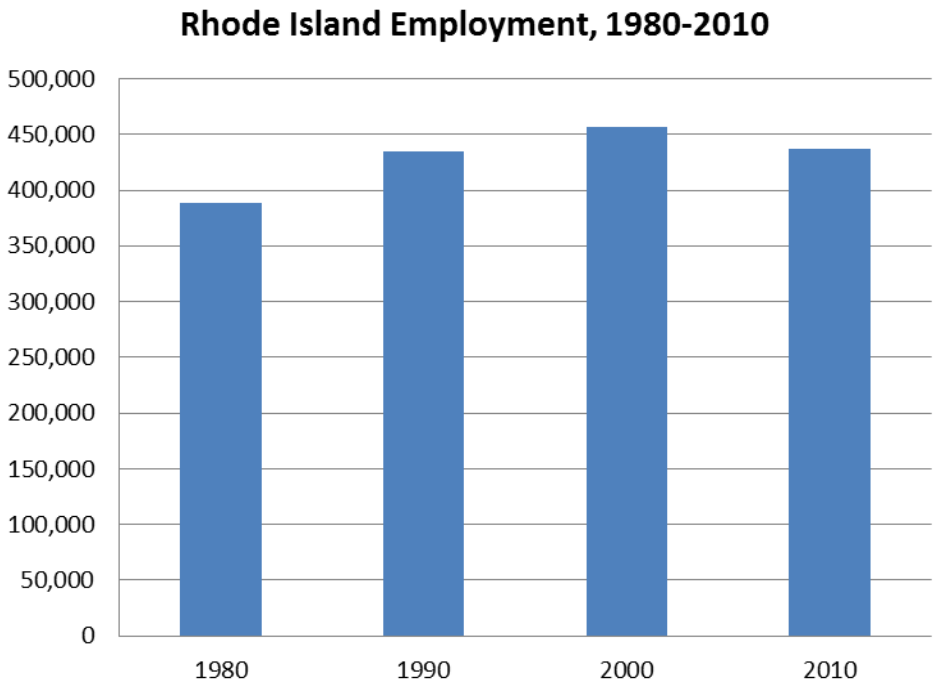
The number of households increased at twice the rate of the population between 1980 and 2010, growing by 22.2 percent while the population grew at 11.1 percent. As the population spread out in a larger number of separate households, the ratio of persons to households fell from 2.8 to 2.5.



Source: U.S. Census

EMPLOYMENT GROWTH

Between 1980 and 2010, employment growth (at 12.4 percent) outpaced population growth, although employment declined by 4.4 percent between 2000 and 2010 while the population remained fairly constant. According to the Rhode Island Department of Labor & Training, Rhode Island's net employment is expected to increase by 39,674 to 549,206 during the ten-year projection period 2008-2018. (Employment projections in this Update come from the Rhode Island Department of Labor and Training's 2008 Employment Projections. These figures include Self-Employed workers and Unpaid Family Workers, while the employment counts in this Update come from the Quarterly Census of Employment and Wages, which excludes these workers. In 2008, this difference accounted for 39,575 workers; in 2018 it is projected to account for 41,708 workers).



Source: Quarterly Census of Employment and Wages, Rhode Island Dept. of Labor and Training

DEMOGRAPHIC CHANGES

Changes in location of population and employment in the last decade have varied. Many cities and towns saw population increases, led by West Greenwich and North Smithfield which experienced growth rates over ten percent, but several cities and towns lost one to seven percent of their population, including a number of cities and inner suburbs, and coastal and island communities. By county, Washington County and Providence County had modest increases, while Newport County, Kent County, and Bristol County had modest declines.

See Map # 1-4

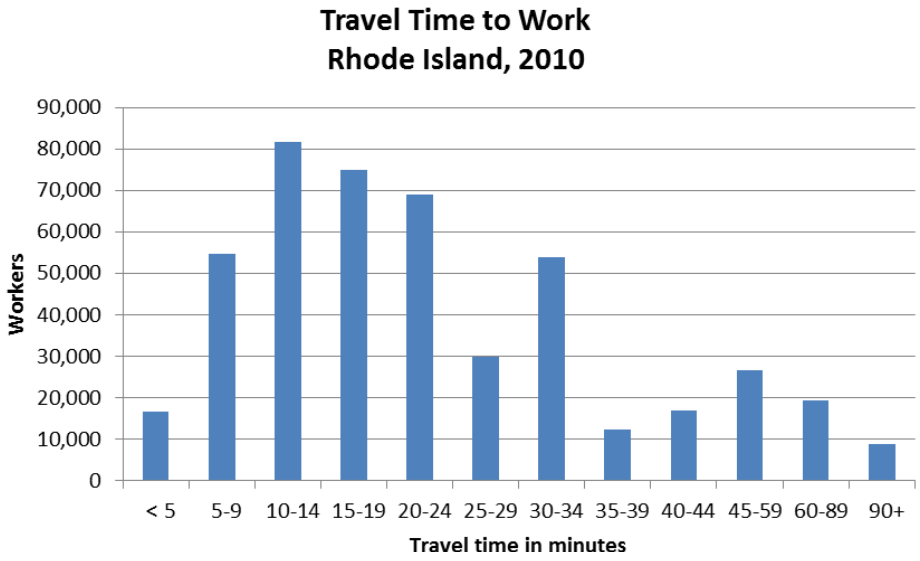
Employment Location Change and Map # 1-5 Population Change

Municipalities experiencing employment growth (by place of work) were decentralized, with the largest percentage gains outside the metropolitan core in Exeter, Smithfield, and North Kingstown, while the cities of Providence, Pawtucket, East Providence, North Providence, and Central Falls lost jobs. The employment losses in the urban centers of the state result in a more sprawling development pattern and leads to greater vehicle-miles-traveled and more difficulty in providing effective transit service.

TRAVEL TRENDS

Rhode Island's size and development pattern affect how workers travel. In 2010, Rhode Islanders had a mean commute time of 22.9 minutes (down slightly from 23.5 minutes in 2000) and commuted as follows:

2010 Work Trips by Mode	RI	US
Drove alone	80.3%	76.6%
Carpooled	8.2%	9.7%
Public transportation (excluding taxicab)	2.8%	4.9%
Taxicab, motorcycle, or bicycle	0.8%	0.8%
Walked	3.8%	2.8%
Other means	0.8%	0.9%
Worked at home	3.3%	4.3%
Average travel time (minutes)	22.9	25.9



Source: 2010 1-year American Community Survey

Compared with the United States, Rhode Island has a higher rate of driving alone to work than the nation. This trend results partly from the dispersion of homes and workplaces to the suburbs and more rural communities. Rhode Island also has a lower share of workers who commute by public transit than the nation, and a lower share of residents who carpool. In Rhode Island, the work trips by mode did not change significantly from 2000 to 2010.

Auto ownership continues to increase slowly, although growth has slowed compared with previous decades. Over half of Rhode Island households own two or more cars; this number has changed little since 2000. The share of households with one car increased by one percentage point to 37 percent, while the share of households without a car fell a percentage point to 10 percent in 2010. These figures vary greatly by city and town. In Providence, 19.2 percent of households did not have access to a vehicle (2010 1-year ACS) while in some rural towns only one or two percent of households had no vehicles (2006-2010 5-year ACS).

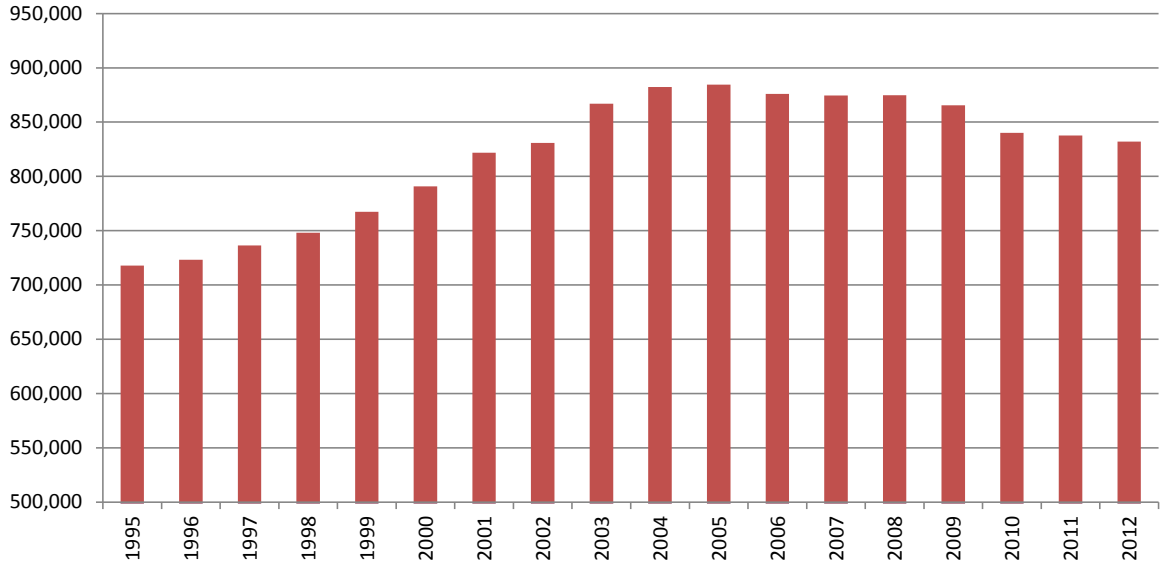
Rhode Island Car Ownership

	Percentage of Households with Access to		
Year	**0 vehicles**	**1 vehicle**	**2+ vehicles**
1980	14%	40%	46%
1990	11%	35%	55%
2000	11%	36%	53%
2010	10%	37%	53%

Sources: 2010 1-year American Community Survey (2010), U.S Census

The number of vehicle registrations (as represented by the Rhode Island Division of Motor Vehicles for every month of January from 1995 to 2012) in the state increased by 16 percent from 1995 to 2012. A slight increase in the early 2000s may have been due to the upturn in the state and national economy during this period. The current decline may also be due to the economic downturn in the state and national economies.

Rhode Island Vehicle Registration, 1995 - 2012



Source: Rhode Island Division of Motor Vehicles

STATEWIDE TRAVEL MODEL

A statewide travel demand model is used to evaluate the transportation system in Rhode Island. This model uses socio-economic data developed by the Statewide Planning Program (population and employment forecasts), together with vehicle trip data collected by RIDOT (HPMS traffic counts), and formulas based on nationally accepted standard practices to project future travel on the state's roadways. The following system-wide indicators of travel result from this effort.

Rhode Island Travel Model

Travel Indicator	2012	2015	2025	2035
Daily number of trips	4,337,916	4,408,640	4,654,492	4,837,062
Daily vehicle miles of travel (VMT)	24,257,378	24,684,051	26,119,290	27,388,290
Daily vehicle hours of travel (VHT)	663,645	672,362	720,954	761,840
Average trip length (miles)	9.86	9.91	10.02	10.20
Average trip time (min)	15.47	15.50	15.79	16.13
Average vehicle speed (mph)	38.24	38.36	38.08	27.92

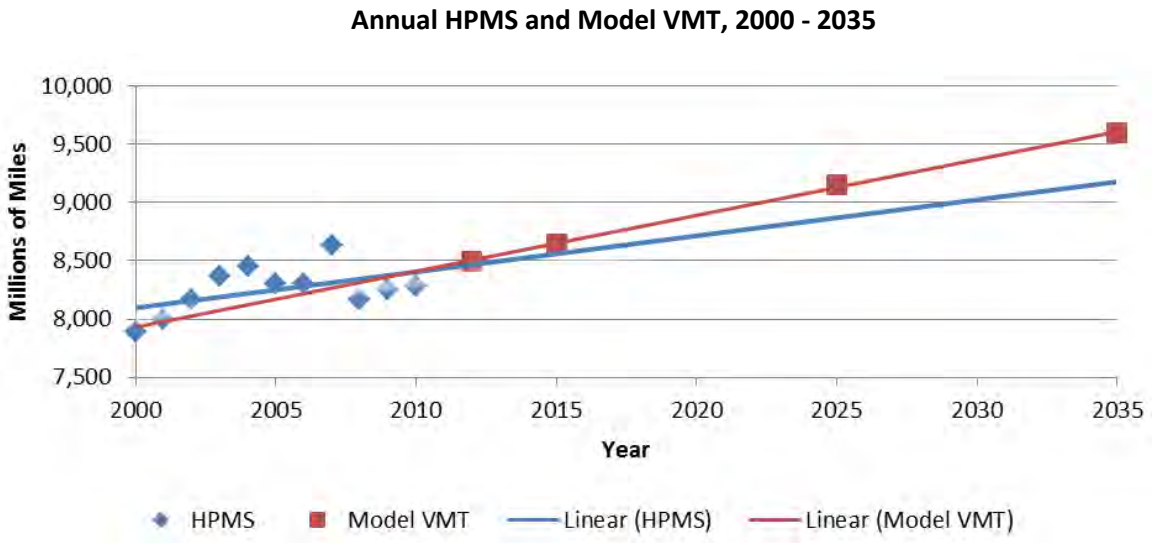
The VMT above have been calibrated to be consistent with Highway Performance Monitoring System (HPMS) data, which are actual traffic counts reported to FHWA. The model's population and employment are based on 2000 U.S. Census data and reflect the Statewide Planning Program's current population and employment projections.

The model indicates that moderate growth in travel is forecast, coinciding with increases in population and employment. The model also indicates that average trip length will increase slightly. This is due to continuing (but slowed) movement of population to suburban and rural Rhode Island. Average travel time is forecast to increase due to two factors: dispersion of development and increasing congestion. A better indicator of congestion is average vehicle speed, which is expected to decrease as well.

See Map # 1-7 Congested Highways 2012 and Map # 1-8 Congested Highways 2035

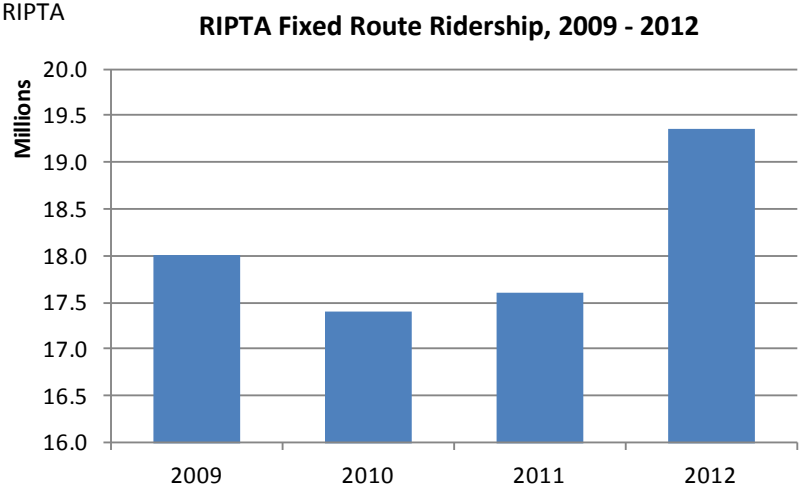
Overall, the level of travel is not anticipated to change dramatically. There will be more travel, with individuals traveling somewhat farther. Congestion will cause travel to take longer. On a system-wide basis, there is concern about growing congestion without corresponding increase in roadway capacity. Congested conditions can be expected to occur mostly during peak travel hours and /or when there is an incident such as highway construction, a severe weather event, or a crash. It will become more important to clear crashes from roadways as quickly as possible.

Annual vehicle miles of travel (VMT) on Rhode Island roads increased dramatically through 2004. Annual vehicle miles of travel in Rhode Island dipped in 2005 and then again in 2008, falling back to the 2002 level. The dip reflects the unfavorable economic conditions and rising fuel costs during this period. The figure below displays VMT projections as derived from the model and HPMS data. Both data sets show future growth although the HPMS line shows a higher rate of growth (1.48 percent per year) than the model shows (1.53 percent per year). The two lines cross in the year 2010. Generally, for planning purposes, 1.0 to 2.0 percent growth per year is often used.



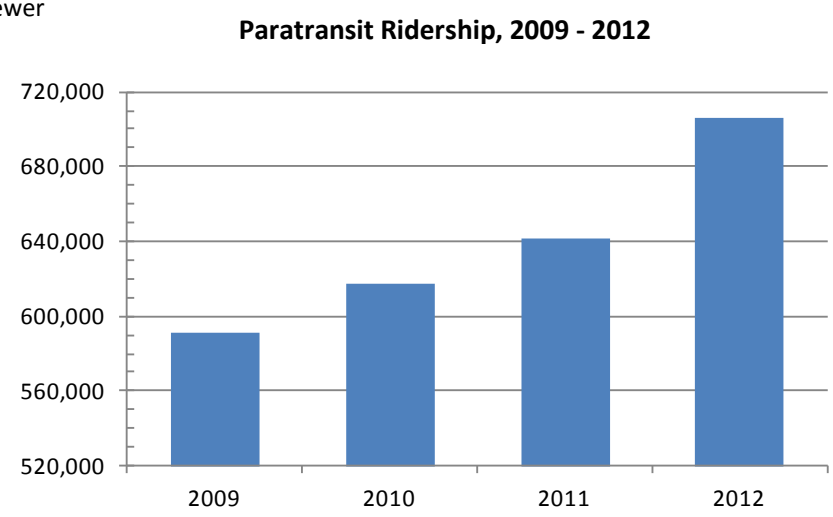
Congestion modeled for the year 2012 shows much of the interstate and the major arterials around Providence experiencing some amount of congestion. South County and the East Bay are also seeing increasing congestion. Congestion continues to worsen up to 2035.

Bus ridership system-wide remained relatively stable from 2009 to 2011. In FY 2011, RIPTA increased fares by 14 percent, resulting in an 8.5 percent increase in total revenues. Ridership increased by almost 10 percent in 2012, most likely due to higher gas prices.



The RIde Program is Rhode Island's statewide paratransit service providing door-to-door service to eligible elderly and disabled residents. RIde's total trips for FY 2012 were 706,315, a 19.5 percent increase since FY 2009.

National travel trends are documented periodically in the Nationwide Personal Transportation Survey (NPTS). The 2009 edition showed that most daily travel is for non-work purposes, such as personal business/errands, social and recreational, shopping, and school. Interestingly, the vehicle miles of travel for social and recreational purposes were significantly lower than 2001, but the number of trips remained the same, indicating that people drove to a similar number of social and recreational activities but chose places closer to home. Both men and women took fewer trips, on average, in 2009 than in 2001 and 1995. Travel by men decreased at a greater rate than travel by women. While traditionally less mobile than men, by 2001 women made about the same number of person trips, and by 2009 women made significantly more trips overall than men. According to the 2009 NHTS, women overall took more trips than men for family errands, including shopping. Men make significantly more trips to and from work, and for work related business. Men and women made about the same number of social and recreational trips.



Airline passengers at the T.F. Green Airport rose sharply in the late 1990's following a terminal expansion and new airline service. The number of passengers climbed slightly until 2001, declined and then rose to a new high in 2005. Since then, the number of passengers continues to waiver due to the economic downturn and aircraft seating capacity reductions as a result of higher fuel costs and airline mergers. The airline industry is still in flux; however, the addition of two popular seasonal markets in February 2012 and the arrival of a new major carrier at T. F. Green Airport in late November 2012 are expected to provide a lift to the airport's passenger numbers.

Part II Transportation System and Needs Assessment

PART TWO - TRANSPORTATION SYSTEM AND NEEDS ASSESSMENT

INVENTORY OF FACILITIES

The transportation system is a complex and integrated network of limited and unlimited access roadways, bridges, rail lines, airports, waterways, off-road paths, passenger and freight intermodal facilities, transit vehicles and vessels, and ITS hardware. The components of the system must operate together in order to be effective. The system components are described below with a description of the future needs. The system needs far outweigh the available resources, which underscores the importance of the Transportation Improvement Program (TIP) for defining program spending categories and prioritizing and selecting projects within those categories.

See Map # 2-1

Transportation Facilities

HIGHWAYS

Rhode Island's first roadways followed foot and horse paths that date to early settlements in the 1600's. As the state urbanized, this evolved into an extensive road network, including arterial highways and local streets, with few areas lacking transportation access. Postwar suburbanization and economic growth stimulated a major wave of highway development. Federal legislation in 1956 funded the Interstate system, and Rhode Island's three Interstate highways (I-95, I-195, and I-295) were open by 1975. State and local road mileage grew from 4,400 to 6,717 between 1962 and 2007, most of the total consisting of local roads and streets. Many of the older urban roads and bridges are expensive to maintain and difficult to upgrade to meet current demands. Harsh weather and salt exposure hasten the deterioration of roads and bridges. The Rhode Island Department of Transportation is the state agency responsible for roadway infrastructure. Highway congestion is increasing on the Interstate highway system where 35 percent of the total VMT occurs on 1.2 percent of the road mileage in 2008.

The state road network (in route miles, not lane miles -- which would be higher) totals over 6,700 miles, and includes in 2008:

- Three (3) interstate highways totaling 70 miles
- Arterial and collector roads totaling 1,029 miles, maintained by the state
- Arterial and collector roads totaling 1,669 miles, maintained by 39 cities and towns
- Local streets totaling 3,904 miles, maintained by 39 cities and towns
- Local streets totaling 45 miles, maintained by the state

The mixed maintenance responsibilities for arterials and collectors reflect the historical evolution of the highway system. The fact that some arterials are locally maintained, while the state maintains lower-level collectors is as much an artifact of history as it is based upon highway functional classification.

Legislation basing highway jurisdiction on functional classification and providing for jurisdictional transfers was passed in the early 1990s, but funding to implement the program was not provided.

In the FY 2013 – 2016 Transportation Improvement Program (TIP), projects are classified in one of the following categories: Study and Development, System Management, System Preservation, or System Expansion. The discussion of the highway system needs is presented in this framework.

PAVEMENT MANAGEMENT

A major effort began in 1999 to resurface much of the state highway system, and the condition survey in 2001 reflects that effort. RIDOT estimates that there is a need to resurface 70 miles per year, which would renew road surfaces every 15 years. In the past, a minimal (no more than several million dollars) program was undertaken with state funds. In recognition of this need, the TIP includes a Pavement Management Program for the resurfacing of roadways. Roadways listed in the Pavement Management Program include projects submitted by municipalities during the project solicitation process and recommendations from RIDOT's Pavement Management Program priority list. Any resurfacing project must be proposed on a Federal Aid System eligible roadway. Both state and local roads are included in the program, based on factors such as regional significance of the road and support for economic development or enterprise zone initiative. There is approximately $118 million programed to pavement management in the FY 2013 – 2016 TIP.

Indications are that the program has been insufficient over time to even maintain roadway condition. The percentage of state highway road surfaces classified by RIDOT as being in "failed", "poor", or "fair" condition increased from 27 percent in 2001 to 58 percent in 2007, and, the percentage rated as "good" or "excellent", decreased from 73 percent to 42 percent. A condition assessment of the Interstate was not available, but has only gotten worse since 2001. Without a dramatic increase in the TIP's resurfacing program, the trend towards deteriorated pavement condition will continue.

Pavement Condition, 2007

	State Highways		Interstate Highways	
	2001	2007 *(est.)*	2001	2007
Excellent	38%	12%	98%	N/A
Good	35%	30%	1%	N/A
Fair	12%	32%	1%	N/A
Poor	12%	16%	0%	N/A
Failed	3%	10%	0%	N/A

SOURCE: 2007 RIDOT estimates based on 2004 condition assessment.

CRACK SEAL PROGRAM

As pavement ages, the impacts of heavy traffic and weather cause the pavement to crack. Cracks allow water to enter the pavement and the highway base, causing further deterioration. This deterioration can be prevented to some extent by sealing the cracks in a timely manner. For many years, funds were not allocated to crack sealing by RIDOT. This effort is estimated to require several million dollars of funds each year. The FY 2013 – 2016 TIP carries crack-sealing and elastomeric surface treatment line items in the Pavement Management Program.

LOCAL ROADWAY MANAGEMENT PROGRAM

Rhode Island cities and towns maintain about 5,573 miles of roads as of 2008. Like the state, they have not had sufficient funds to maintain their systems. Many streets have been constructed by developers, and then turned over to municipalities. While property tax revenues increase, pressures and costs rise for services like schools, police, and fire services. The need for pavement maintenance does not occur for ten or more years. By that time, increased property tax revenues have long been assimilated into the municipal budget. Sidewalks and traffic calming projects are also cited as needs by the cities and towns. A local roads program has been included in the FY13-16 TIP with $4.3 million to begin to assist municipalities with transportation infrastructure maintenance.

BRIDGES

As of 2012, the State owns 611 bridges and culverts, and cities and towns own 149 bridges on the National Bridge Inventory. Two of the largest bridges in the state, the Mt. Hope Bridge, and the Pell Bridge at each end of Aquidneck Island, are operated by the Rhode Island Turnpike and Bridge Authority. Statewide, a total 772 bridges on the National Bridge Inventory require ongoing maintenance.

Given the large number of historic bridges in Rhode Island, it is to be expected that a considerable percentage would be classified as functionally obsolete. The primary cause of functional obsolescence is deck geometry or under clearances that do not meet contemporary design standards. "Functionally obsolete" bridges are considered to be performing satisfactorily (good traffic flow, low accident rates), and are not programmed to be worked upon, unless they are also structurally deficient. Decisions to replace or rehabilitate bridges to address obsolescence must also consider the impact on historic resources and community character.

Rhode Island Bridges, 2012
greater than 20' long

Bridge Classification	State-maintained		Locally maintained	
Structurally sound	239	39%	47	31%
Functionally obsolete*	179	29%	40	27%
Structurally deficient**	123	21%	34	23%
Posted bridges	61	10%	22	15%
Closed bridges	9	1%	6	4%
Total Bridges:	**611**	**100%**	**149**	**100%**

*Functionally obsolete: substandard geometrical condition of the structure (outdated design)
**Structurally deficient: deterioration of the physical condition of the elements that make up the bridge
Source: RIDOT, 2012

As with highway pavement, limited resources have been allocated to bridge maintenance over the past 20 years. Without ongoing maintenance efforts, many bridges have deteriorated and now need expensive rehabilitation. When bridges become severely structurally deficient, vehicle weight restrictions are posted. In extreme cases bridges are closed to all traffic. This impacts local travel, commerce, emergency response, public transit and school buses.

There are 83 bridges on the National Bridge Inventory with posted weight limits. Alternate routes for heavy trucks (> 18 tons) have been posted, and these will be in effect for several years as design and construction can be completed. Additionally, the southern span of the Washington Bridge has been found to be seriously affected by deterioration due to age and lack of proper maintenance over the years. All of these spans are critical links in the state and regional

transportation systems. Other significant bridge rehabilitation needs of the State system include the Route 6/10 interchange bridges in Providence, and bridges of I-95, I-195, and I-295.

RIDOT has developed a bridge washing program to remove salt and sand, reduce corrosion and maintain the functional life and safety of bridges. This program will be expanded to provide for the cyclical, periodic cleaning of all of Rhode Island's bridges. Bridge inspections have been brought up to date.

Because of the importance of the state's bridge infrastructure, the FY 2013 – 2016 TIP allocates $39.5-$46 million per year to bridge rehabilitation. However, even this level of effort will not be sufficient if additional state funds are not allocated to regular bridge maintenance.

ITS

The state has made great strides in recent years in implementing Intelligent Transportation Systems (ITS). This network is in place to provide drivers with better traffic information and also to clear traffic incidents more quickly and reduce congestion. The heart of the system is a Transportation Management Center (TMC) which is staffed 24 hours a day utilizing funding from the Interstate Program. The TMC receives traffic video signals from cameras and speed sensors. Information on traffic conditions and incidents can be passed along to motorists by several means, including RIDOT's website, highway advisory radio, and variable message signs along the highways. RIDOT cooperates with neighboring states in alerting drivers to major incidents.

RIDOT phased ITS Deployment Plan currently covers the Providence metropolitan area and has been expanded to cover major arterials in the East Bay and South County. They will continually need to update this plan as new technology becomes available. It will also be important to improve incident reporting to demonstrate congestion reduction due to reduced incident clearance times. A more detailed discussion of the benefits of ITS is included in the Congestion Management Process in Appendix A.

TRAFFIC/SAFETY PROGRAMS

Another area where there are significant needs is traffic and pedestrian safety programs. These programs manage traffic in congested areas and provide safety improvements. The following project types are included:

Hazard Elimination	Arterials / Traffic Signal Synchronized System	Traffic / Safety Design / Planning / Right-of-Way
Drainage Improvements	Highway Safety Improvement Program (HSIP)	Lighting Repair and Improvements
Municipal Traffic Projects	Pavement Striping	Railroad Grade Crossings
Repair Damaged Safety Devices	RI*STARS Program	Guide Signing Inventory / Improvements
State Traffic Commission Projects	Traffic Monitoring	Traffic Signal Optimization

The FY 2013 – 2016 TIP allocates $30.5 million each year to this area. Although RIDOT has discretion to select projects within these line items, a list of anticipated projects is listed in Appendix E of the TIP. A modernization program to upgrade signals to more energy-efficient light-emitting diodes (LEDs) is underway. Replacement increases the lifetimes of signal lights, decreasing maintenance, and enhances signal visibility and safety.

HIGHWAY LIGHTING

Adequate highway lighting can be an important factor in highway safety, particularly for older drivers. Glare can be a safety problem because it causes annoyance, discomfort, and fatigue, which can result in driver error. Programs to replace streetlights with more efficient and safer lights known as full-cutoff luminaries are in place in some areas of the state. These fixtures reduce the level of light pollution, save energy; increase safety for pedestrians, motorists, and bicyclists; and produce a more aesthetically pleasing environment.

In addition to the problem of too much light, another significant safety issue, especially for the older driver, is not enough lighting. Repair or replacement of aging and obsolete highway lighting infrastructure is needed for some highway segments and ramps. New or improved lighting may also be needed in some locations where traffic has increased in recent years. State highway lighting adequacy should be periodically reassessed to determine areas where new or enhanced lighting is necessary.

HAZARD ELIMINATION

New crash data systems allow more precise analysis of locations and causes of crashes. This program addresses high hazard intersections where it is determined that improvements to the geometry or signalization will result in fewer crashes. Roundabouts have been used in several intersections in the state and they appear to be performing as hoped and improving traffic flow and safety.

HIGHWAY DRAINAGE

Insufficient highway drainage can affect highway safety. Ponding of water on highway surfaces creates poor traction for vehicles and can lead to loss of control. To correct unsafe roadway conditions caused by improper drainage, and to enhance environmental quality, the FY 2013 – 2016 TIP includes $4 million for drainage improvements statewide under the Traffic Safety Program. Further discussion of water quality can be found in Part Four.

PUBLIC TRANSIT

FIXED ROUTE BUS

Private companies developed trolley lines in the late 1800s, first horse-drawn, then electric. Ridership rose through the early 1900s and flourished again during World War II. After World War II, trolleys were replaced by buses. As suburban development spread and auto ownership increased, however, ridership on the private transit system fell drastically. In 1964 the state created the Rhode Island Public Transit Authority (RIPTA). RIPTA doubled the route system by 1986, to 447 miles, making it a statewide system. Expansion was supported not only by the state but also by federal operating assistance, which began in FY 1975. RIPTA's enabling legislation was changed in 2007. Originally created to take over failed transit systems, it now is designated to be the State's mobility manager. Currently there are 236 buses, 37 Park 'n' Ride lots, and 54 routes statewide with a single fare ($2.00 per ride). All passenger vehicles are equipped for people with disabilities and all full size buses contain bicycle racks. Levels of service on RIPTA's fixed routes vary from route to route, depending on demand; some routes offer only weekday service while other routes operate evenings and Saturdays and Sundays. Twelve colleges and universities have been recruited to participate in the U-Pass Program for students. The level of participation for these schools varies from statewide bus travel with the presentation of the school and/or staff ID to fare products being sold on campus. RIPTA operates trolley service in Newport and Providence (3 routes) with a fleet of five historic-style green trolleys and ten hybrid trolleys.

A Vision for the Future of Transit in Rhode Island, RIPTA's five year strategic plan, was completed in 2012. The plan outlined five major goals for RIPTA's future:

- Serve as Rhode Island's mobility manager
- Attract more riders
- Grow the transit network to expand mobility and support economic growth
- Realize the environmental, economic, and quality of life benefits of transit
- Identify a sustainable funding strategy

FLEX SERVICE

Flex Service is provided in eight (8) zones with a fleet of 17 vehicles. This is a hybrid transit service, which combines bus stops with demand response (reservation) service. Flex vehicles do not follow a regular defined route; they travel directly to the next pick-up/drop-off location or time point. This service links patrons with destinations within the zone and with scheduled stops on fixed route transit lines. This is an innovative transit option that responds to transit needs in more rural areas. Two of the demand-response zones provide job access services in support of the state's "welfare to work" efforts. Future needs include adherence to a vehicle replacement program, continued application of ITS technologies, and continued evaluation of routes and service areas.

PARATRANSIT

The RIde program continues to focus on providing demand-responsive transportation to low income, elderly and disabled people. RIde is the statewide broker managing the requests for service and the contracts with carriers operating 104 daily vans that provide service around the state. Funding agencies pay an hourly amount that is deposited into a restricted receipt account (Paratransit Capital Fund) used to provide state matching funds for capital expenses, such as replacement vehicles. Future needs include continued adherence to a vehicle replacement schedule and continued enhancement of ITS technologies. Service expansion may be necessary as the population ages.

FUTURE NEEDS

RIPTA completed a strategic planning effort in order to guide bus transit development for the next five years. The plan identifies important investments, some of which are underway, including the development of Rhode Island's first rapid bus service, improved data collection, and improved customer amenities. RIPTA also completed an Alternatives Analysis reviewing opportunities to improve connections in the Providence Metropolitan area. A fixed route streetcar connecting College Hill, the Jewelry District, and Upper South Providence was selected as the preferred alternative. A comprehensive operational analysis is also underway to identify opportunities to create a more efficient and effective transit network. Service standards will be updated to ensure service matches population and employment demands and scenarios will be evaluated that would improve service based on ridership surveys and extensive data analysis.

COMMUTER RAIL

Under the Pilgrim Partnership II Agreement that is in effect, the Massachusetts Bay Transportation Authority (MBTA) operates weekday and weekend commuter rail service between Boston and Providence, and weekday commuter rail service between Boston and Wickford Junction, while RIDOT contributes capital funding for projects benefitting the Providence line (i.e. Pawtucket layover yard, trainsets, station improvements, etc). This service carries approximately 2,000 riders per weekday from Providence and 900 riders per weekend day. As of September 2012, there are seventeen (17) inbound trips per weekday from Providence to Boston and nineteen (19) outbound trips per weekday from Boston to Providence. There are ten (10) inbound and ten (10) outbound trips per weekday south of Providence at the Interlink in Warwick and Wickford Junction in North Kingstown to Providence and Boston. There are

nine (9) inbound and nine (9) outbound trips per weekend day between Providence and Boston. There is currently no service south of Providence on the weekends.

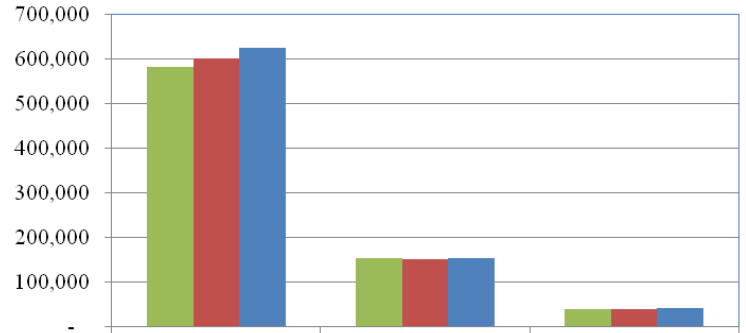
Future commuter rail needs in Rhode Island include continuation of existing service to Providence and the continued expansion of service in and around Rhode Island. MBTA service extended south of Providence with the station openings at the Warwick Interlink at T.F. Green Airport in 2010 and Wickford Junction in North Kingstown in 2012. The operating costs for this service are funded by CMAQ for 3 years, but afterwards may require annual state subsidies. Additional commuter stations that are under consideration by RIDOT in Rhode Island include Pawtucket, Cranston, East Greenwich, West Davisville, Kingston, and Westerly. A potential commuter station in Woonsocket has also been the subject of a recent study involving the City of Woonsocket, Providence Foundation, and other stakeholder agencies, and is anticipated for further exploration at the planning level. Communities with commuter stations under consideration should be cognizant of, and plan for, secondary growth impacts using Transit Oriented Development (TOD) and other Smart Growth tools. In addition, rail service to Fall River, Massachusetts would have benefits (as well as impacts) in the East Bay Rhode Island area. RIPTA believes there is a market for bus service across state lines in Massachusetts to serve rail stations in South Attleboro and Franklin. Onerous liability insurance required by the Federal Motor Carrier Safety Administration (FMCSA) has prevented RIPTA from serving these destinations. However in Pawtucket, RIPTA and RIDOT are working together to build a bus turnaround and walkway connection to the South Attleboro MBTA station which is just over the state line.

INTERCITY BUS

Peter Pan bus lines provide regular motor coach service in the New England and New York area, serving Providence, T.F. Green Airport, and Newport. Greyhound has a national service area with the same stops as Peter Pan in Rhode Island. MegaBus operates several routes connecting Providence to Boston and New York City. Future needs include continued cooperation with other transportation providers and a continued focus on intermodalism.

INTERCITY RAIL

Amtrak Ridership in Rhode Island, 2009 - 2011



	Providence	Kingston	Westerly
FY 2009	582,296	153,023	38,792
FY 2010	602,474	151,954	38,589
FY 2011	625,995	154,237	41,335

Amtrak provides passenger rail service in the Northeast Corridor, with nineteen (19) trains operating each day in each direction (north to Boston and south to New York) including Acela and Northeast Regional trains. All trains stop in Providence, with nine (9) southbound trains stopping in Kingston and four (4) southbound trains stopping in Westerly. Northbound, eight (8) trains stop in Kingston and five (5) trains stop in Westerly. Amtrak ridership from Rhode Island's three stations in 2011 was 821,567, up 3.6 percent from 2010, and up 9.5 percent from the 2007 ridership. Of this number 625,995 used Providence Station, 154,237 used Kingston, and 41,335 used Westerly. Amtrak completed electrification of the shoreline route, and

high-speed Acela rail service utilizing new equipment commenced late in 2000. Future needs include continuation of existing service at reasonable prices, new service at the Warwick Interlink, and improved intermodal connections at terminals to encourage car free tourism and business travel. The capacity and condition of the Northeast Corridor must be preserved and improved to meet the growing demand for passenger rail service in the Corridor. This is a national asset and its future is of great concern to the congressional delegations of all of the northeastern states.

CARPOOL / VANPOOL

The Commuter Resource Rhode Island program is operated by RIPTA under contract with RIDOT. The purpose of the program is to attract commuters to carpool, vanpool, and enhanced bus services. According to the 2010 American Community Survey 80.3 percent of Rhode Island workers age 16 and over commute to work alone in a single occupant vehicle, which is close to the national median of 76.6 percent. Other modes of transportation for workers traveling to work in 2010 include 2.8 percent utilizing public transportation, 8.2 percent carpool, 3.8 percent walk, and 3.3 percent work at home. Efforts to increase auto occupancy for work trips (carpool matching) would generate air quality and energy conservation benefits, which can greatly improve the efficiency of peak-hour travel. Carpooling is especially practical for work trips to suburban and out-of-state employment centers that lack peak-hour bus service. RIPTA has a web-based carpool matching service to help capture this market[1] along with a reduced rate carpool parking program at the Providence Place Mall. These trips would be diverted from single-occupant auto travel rather than transit or vanpooling. Vanpools are especially suited to suburban employment sites that are not served or are inadequately served by transit. Characteristics that facilitate the formation of efficient vanpools are large employee bases, concentration of employee residences in a few areas, and longer-than-average trip lengths. The State of Rhode Island, as the largest employer, should be targeted for special promotions to enable employees to choose an alternative to the single-occupant auto for work trips. Policy changes in the provision of free and low-cost parking, and incentive- laden commuter options (subsidized bus/commuter rail passes, free commuter rail parking, etc.) must be considered to provide success to this type of endeavor. In 2008, the General Assembly passed a bill directing the Department of Administration to convene a committee to produce a state employee transportation guide plan intended to reduce single occupant vehicle commuting. This plan is still under development and is expected to be forwarded to the General Assembly in early 2013.

[1] http://alternetrides.com/List_Destinations_t.asp?Sponsor=81759282

FERRY

Several year round and seasonal ferry services are operated in Rhode Island:

Year round:

- Point Judith and Block Island (Interstate Navigation)
- Prudence Island and Bristol (Prudence Ferry)

Seasonal service:

- Point Judith and Block Island (Fast Ferry)
- Newport to Block Island (Interstate Navigation)
- New London, Connecticut and Block Island (Nelseco Navigation)
- Montauk, New York and Block Island (Viking Ferry Lines)
- Quonset and Martha's Vineyard (Vineyard Fast Ferry)
- Jamestown and several points along Newport's waterfront and islands (Jamestown and Newport Ferry Company)

These services should continue as they either divert traffic away from roads or provide the sole means of transportation. Future ferry services may include some type of cross-bay ferry service, perhaps from the Warwick area to the Bristol area (roughly halfway between the I-195 bridge in Providence and the Newport and Jamestown Bridges).

BICYCLE

Rhode Island has become a leader in providing bicycle paths, lanes, and routes for both recreation and alternative travel mode options. In 2012, there are just over 63 miles of paved bicycle paths in Rhode Island and more than 25 miles of paths under design. Such examples include the East Bay Bike Path, Blackstone River Bikeway, Ten Mile River Greenway, South County Bike Path, and the Washington Secondary Bike Path which are immensely popular with residents and visitors alike. Several others bicycle paths are in planning, design, and construction phase. Additionally there are more than 70 miles of signed on-road routes.

Some of Rhode Island's longer bicycle paths – the Blackstone River Bikeway, the Washington Secondary, and the East Bay Bike Path – are part of an ambitious effort from the Rhode Island based East Coast Greenway Alliance to create a contiguous bike path from Maine to Florida. Among the 15 states the East Coast Greenway would pass through, Rhode Island is a leader in constructing its segments of the bikeway.

According to the 2000 110th Congress Sample Data, 0.3 percent of Rhode Island workers age 16 and over commuted to work on bicycle. This figure increased to 0.7 percent in 2010 according to the 2010 American Community, and is also slightly higher than the national average of 0.5 percent of workers commuting by bicycle.

RIDOT will continue to implement its policy of accommodating bicyclists whenever feasible on existing roadways through "bicycle friendly" design. The goals of the Bicycle Program are to complete the paths currently under design, and to develop new projects that will improve connections among the paths and linkages with other transportation modes as a means to encourage alternatives to the automobile. For more detailed information on RIDOT's statewide bicycle project initiatives, please visit www.dot.ri.gov/bikeri/.

PEDESTRIAN

As of 2010, Rhode Island's (excluding New Shoreham) 1,082 miles of state roads, 395 miles have sidewalks. It is not known how many miles of sidewalks there are on local roads, but they are generally found in most downtown areas and urban neighborhoods. Suburbs and rural areas are typically lacking in sidewalk infrastructure. Although there is high demand for new sidewalks, many of these projects are prohibitively expensive due to drainage, utility and right of way issues. In 2000, a Pedestrian Safety Plan was drafted by the RI Department of Transportation to inform state and local agencies, the private sector and individuals how transportation policy, planning and practice can be integrated to better meet the walking needs of residents and visitors. The plan encourages strong local initiatives in identifying, planning, prioritizing and funding pedestrian improvements because most walking trips are local. The data analyzed in this report show that most pedestrian fatalities occur while attempting to cross the street. Improving the walking infrastructure has many benefits, including health, safety, and helping to meet environmental justice goals.

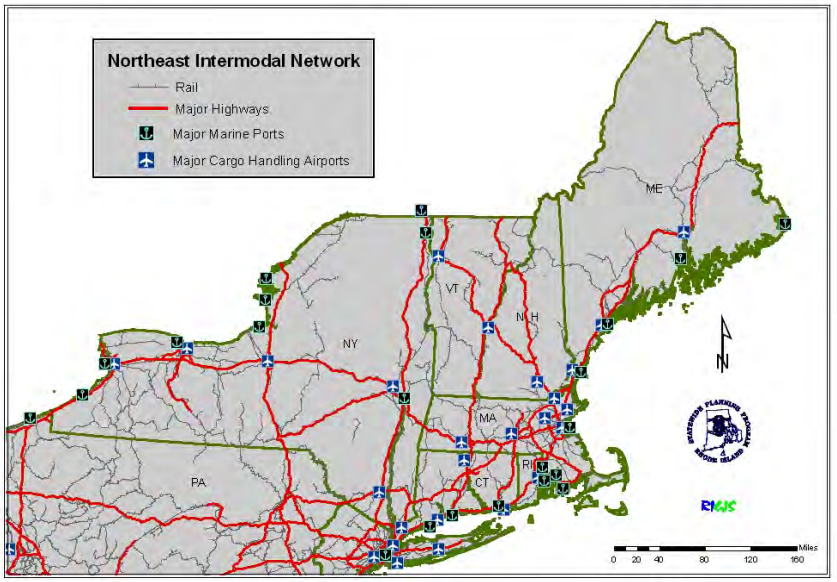
Future pedestrian needs are staggering. Maintenance of existing crossings, signals, and sidewalks is daunting in and of itself. Achieving ADA compliance on all sidewalks is expected to cost $65 million in Providence County alone (RIDOT Pedestrian Safety Plan). Improving safety (especially at crossings) and constructing new sidewalks are critical, and will require substantial state and federal funding and cooperation with local governments and developers. Mixed use centers, commercial areas, schools, and recreation areas should be prioritized.

SAFETEA-LU created Safe Routes to School Program for kindergarten through eighth grade through which Rhode Island has allocated $1 million per year in the FY 2013 – 2016 TIP. The first round of projects awarded 10 SRTS programs in seven (7) municipalities and involved 30 schools. These projects are in various stages of development ranging from in-process of being implemented to completion. The second round awarded 12 programs in 10 municipalities, involving 16 schools. These projects are in the process of being implemented or will begin shortly.

FREIGHT

The Providence and Worcester Railroad (P&W) is a major regional freight carrier, connecting Rhode Island to CSX (Class I freight carrier) in Worcester, MA. The Seaview Railroad operates switching service at the Quonset Business Park in North Kingstown and connects to the P&W. The Freight Rail Improvement Project (FRIP) involved construction of 17 miles of track parallel to the Amtrak Main Line to serve freight movements between Central Falls and the Quonset Business Park / Davisville and to access points west of New England. The FRIP has been successful in that tri-level automobile rail cars are now moving to and from the Port of Davisville, now possible through increased vertical clearances. Approximately five miles of track through Apponaug and East Greenwich are still shared by freight and passenger operations along the two main lines. The new track is also used for MBTA commuter rail service.

Northeast Intermodal Network



Common carrier trucking terminals are concentrated in the Providence metropolitan area and provide service throughout the state and nation. Integrated express package delivery services including Federal Express and United Parcel Service (UPS) have major facilities in Warwick that are within close proximity to T.F. Green Airport and Interstate I-95.

Marine transportation is the oldest form of transportation in the state and Newport was once one of the nation's major ports. The Port of Providence handles liquid, dry, and breakbulk cargoes exceeding 2.7 million tons annually as of 2008. Dredging to 40 feet (at mean low water) has been completed along 5,000 feet of berthing area. Dredging in the main shipping channel to 40 feet MLW has also been completed. New automobiles and frozen fish arrive at the Port of Davisville; automobiles are shipped throughout the region by rail and truck while the fish are flown worldwide.

Future movement of freight relies on a functional highway system with reduced congestion. In 2001, RIDOT and the Federal Highway Administration (FHWA) completed a Commercial Vehicle Parking Supply and Demand analysis for National Highway System (NHS) segments in Rhode Island. This study found, and the situation still exists, that on a statewide level, there is a current shortage of commercial vehicle parking spaces (i.e. tractor-trailer parking) along NHS segments in Rhode Island, and that, absent action to increase supply, the shortfall would grow to between 298 and 809 spaces (depending upon future demand growth assumptions) by 2019. Interstate I-95 was found to be the most severely impacted NHS route, due to high truck volume and limitations on truck parking. The re-opening of one rest area on northbound I-295 in Cumberland helped to alleviate the deficit to some degree. The re-opening of the southbound I-295 rest area in the same area is still being planned. Safe at-grade crossings should be maintained along the P&W lines. The Freight Rail Improvement Project (FRIP)

and the Providence River dredging project are complete and ensure the continuity of multi-modal goods movement. The state should consider short-sea-shipping or "marine highway" options such as the Port Inland Distribution Network (PIDN) in conjunction with the Port Authority of New York and New Jersey to divert containerized cargo from I-95. Continued coordination with regional groups such as North Atlantic Transportation Planning Officials and New England Governors / Eastern Canadian Premiers Transportation Working Group will help realize these objectives.

Statewide Planning completed a Freight Planning Needs Assessment in 2006. This report describes freight activities occurring at the state and regional levels and also describes staff needs with respect to training and modeling and outreach to the freight community and cities and towns through the comprehensive planning process. This paper can be viewed at www.planning.ri.gov/transportation/158/158.pdf

INTERMODAL

The table to the right accounts for Rhode Island's terminals that provide intermodal and/or intramodal connections for passengers and freight as of September 2012. Some of the intermodal passenger hubs are full service centers that have been created or improved in recent years. Others on the list provide minimal facilities at present and require upgrading. Redevelopment pressures may threaten the viability of the Port of Providence. The State's future marine freight terminal needs must be considered before any land use changes are allowed to occur. New intermodal passenger stations, particularly new rail stations, will be required to meet travel demand in the future.

Rhode Island's Intermodal Terminals, Passenger & Freight, 2012

Location and Terminal	Passenger	Freight
Northern Rhode Island		
Blackstone Valley Visitors' Center -- Pawtucket	■	
Metro Rhode Island		
Amtrak Station – Providence (1)	■	
Kennedy Plaza (major RIPTA hub) -- Providence	■	
Providence Harbor		
Waterson Terminal Services (formerly ProvPort) (1)		■
Allens Avenue Area	■	■
East Providence		■
T.F. Green Airport – Warwick (1)	■	■
Interlink Station - Warwick	■	
East Bay Rhode Island		
RIPTA hub (Ames Plaza), East Providence	■	
Newport Gateway Visitors' Center and Perrotti Park	■	
Newport Harbor	■	■
Southern Rhode Island		
Quonset Davisville - North Kingstown (1)	■	■
Wickford Junction Station – North Kingstown	■	
Kingston Station - South Kingstown (1)	■	
RIPTA hub (Wakefield Mall) - South Kingstown	■	
Westerly Station - Westerly	■	
Port of Galilee – Narragansett (1)	■	■
Old Harbor -- Block Island	■	■

(1) National Highway System Intermodal Connector

AVIATION

There are six state-owned airports in Rhode Island operated by the Rhode Island Airport Corporation (RIAC). T.F. Green Airport in Warwick is the primary commercial service airport (served by seven airlines). T.F. Green has experienced a fluctuation in passenger activity over the last 10 years. After reaching a new high of nearly 6 million annual passengers in 2005, RIAC has seen a slight decline as a result of the economic recession and aircraft seating reductions related to higher fuel costs and several airline mergers.

Since 1996, the passenger terminal has undergone a major transformation and several renovations related to security, terminal capacity, and separation of arriving and departing passengers. The Warwick Interlink facility was completed in 2010 and combines a passenger commuter train station and rental car facility with an elevated walkway linked to the T. F. Green Airport terminal. It is the first station design of its type and is made possible by an innovative financing plan that relies on rental car fees. The Interlink combines train, bus, auto, plane, and interstate highway connections that all serve as an important regional transportation hub and reduce congestion around the airport. Looking forward, T.F. Green will undergo an extensive 5-year capital program that will improve Runway Safety Areas and extend the primary

runway to 8,700 feet.

Newport and North Central airports serve general aviation. Quonset serves general aviation and the RI National Guard (Army and Air). Block Island and Westerly are also general aviation with limited commercial service between the two. The airport is especially important to Block Island for emergency service.

Future aviation needs are discussed in the State Airport System Plan (State Guide Plan Element 640). For the purposes of the Transportation Plan, access to airports and improved surface transportation connections at the terminals will help the airports to function better as intermodal centers.

NEEDS ASSESSMENT

The nation and most states are facing severe fiscal crises in their transportation programs. Revenues from fuel taxes have been stagnant and have not been indexed to inflation. On the expense side, construction and materials costs have increased enormously. Consequently, continued reliance on the same revenue sources will result in ever diminishing transportation programs. Many states are looking at drastic measures to correct this situation such as dramatic toll increases or new tolls, fuel tax hikes, mileage taxes, and outright sale or lease of state assets. The funding model for financing transportation in the United States is 50 years old, and a fundamental overhaul may be on the horizon.

Rhode Island's long range plan, out of necessity, is based on the current funding level as new revenue sources are not yet forthcoming. This current path does not permit the state to maintain its infrastructure as it should, leading to a downward spiral of the transportation system. In order to begin the dialogue on what our needs are and how we can afford to pay for necessary improvements, a system level analysis was undertaken that defines four levels of transportation investment.

This topic deserves far more attention and study than can be devoted to it in a few pages of this Plan. This analysis is a modest RIDOT/RISPP staff effort to provide order of magnitude numbers. It includes capital and operating expenses, state and federal resources, and highway and transit modes. Each scenario is a point in time and does not consider change in VMT, change in price or consumption of gas, variable fees/tolls for heavy vehicles, personnel or construction cost increases, or new technologies. Change in debt service over time is not reflected. Locations for tolled highways are not specified. Earmarks have not been considered in the analysis.

The four scenarios are as follows:

SINK

This scenario provides for no new sources of revenue. The TIP for FY 2009-2012 reflects this level of funding.

The Sink Scenario assumes that there are no new funding sources, and the state will continue to rely on current taxes and general obligation bonds to match federal funds. This is a recipe for disaster as has been pointed out in previous transportation plans. Deferred maintenance and highway projects are the result of this unsustainable system. In this scenario, GARVEE projects and bridges demanding immediate attention are the priorities. RIPTA bus and ferry services are cut. Please note that this scenario does NOT reflect the worst case scenario. Revenues from the Highway Trust Fund may decrease by 35 percent next year if Congressional action is not taken.

TREAD WATER

There are many projects in the TIP (Highway and Enhancements especially) which have been there for years and are continually deferred due to lack of funds. This scenario provides for enough funding to complete these projects, and also provides for sustainable bridge and pavement management schedules. The Routes 6 / Route 10 project, currently estimated at $300 million, can be programmed. Most major highway projects already in the pipeline can be completed. RIPTA service is maintained at 2007 levels including the ferry. Most importantly, this scenario breaks the debt financing cycle and shifts state personnel costs away from the federal program to state funds. This scenario is considered to be the "bare minimum" of where we need to be.

The Tread Water Scenario provides for timely maintenance of infrastructure and breaks our unsustainable debt cycle.

SWIM

In order to improve the overall condition and capacity of the transportation system, some expansion of all modes must occur. This scenario makes progress on bicycle and pedestrian infrastructure and increases bus service. Bus service is expanded in corridors in which the greatest VMT savings can be achieved. It provides commuter rail along the Northeast Corridor (Westerly to Pawtucket and points between), Aquidneck Island, and widens certain congested segments of I-95 and I-295. It also provides startup funds for a desperately needed local assistance program. The end result is that mobility is enhanced and the state is on a path toward forward progress.

The Swim Scenario provides for targeted expansion and overall improvement in the condition of the infrastructure.

WIN THE RACE

The term "Play to Win" is used by the Rhode Island Economic Policy Council to describe what the state must do not only to compete and keep afloat, but to "win." This provides the infrastructure that will carry Rhode Island successfully through at least the first half of the 21st century. Included in this scenario are Providence streetcars, major bridges retrofitted for bicycle accommodation, and commuter rail in the Blackstone Valley. I-95 is widened to the Connecticut border. Bus service is expanded to more rural communities. RIPTA will implement a new model of human services transportation in cooperation with the towns that is based on the Flex Service model and runs 1-5 days per week. All communities have stable state aid for local roads. Congestion is reduced and air quality improves. The walkable and livable communities as envisioned in the State's Land Use Plan can be realized. This scenario is highly desirable, but carries a hefty price tag.

The Win the Race scenario achieves the vision of the state's land use plan, provides real choice and modal diversity, and maintains economic competitiveness for future generations.

The table below summarizes transportation needs for the four scenarios by program area. A more detailed table which contains notes and assumptions is included in the Appendix.

The cost of the Tread Water scenario is 50 percent higher than what the current funding level is. The Swim scenario is 90 percent higher, and the Win scenario is 163 percent higher. Can the State afford this, and are its residents willing to pay for it?

Potential new revenues have been identified to fund the four transportation scenarios. This analysis assumes that user fees, rather than general taxes, should be generated in sufficient amounts to achieve a sustainable system. Selling or leasing infrastructure has not been included as an option in this exercise, but that should not be ruled out. These fees should be a combination of new fees/taxes and a diversion of existing transportation revenues. The following revenue sources are considered:

- Diversion of existing registration fees to transportation, and increase in fees
- Diversion of existing vehicle sales tax
- Increase in gas tax
- New tolls
- New sales tax on fuel

Particularly with diversion of revenues from the General Fund to transportation, lawmakers will face difficult choices between replacing that revenue or curtailing other state services. The future of transportation funding relies to a great extent on the authorization of the next federal surface transportation bill. At a certain point in time, the gas tax will become obsolete when fuel efficiency improves and alternative fuel vehicles become more common.

A summary table of this analysis appears on the next page, and, again, a more detailed table is included in the Appendix.

TRANSPORTATION NEEDS

(in millions of dollars per year)

Transportation Programs	Sink	Tread Water	Swim	Win the Race
RIDOT Maintenance and Operations	$45	$109	$114	$128
Capital Maintenance	$20	$45	$71	$113
Highway	$42	$177	$245	$342
Traffic Safety	$6	$18	$25	$40
Bridge	$67	$128	$128	$128
Bike/Pedestrian	$9	$16	$24	$32
SPR/PL	$5	$8	$8	$8
Enhancements	$4	$13	$15	$25
CMAQ	$10	$16	$20	$20
Personnel (deduct from proj. cost)		-$40	-$40	-$40
Commuter Rail / Warwick Station	$20	$14	$32	$60
ROW	$0	$1	$5	$10
Design	$21	$25	$40	$60
RIPTA Bus	$112	$155	$175	$225
Total	**$361**	**$683**	**$862**	**$1,150**
GARVEE*	$58			
Other debt service**	$35			
Total with debt service	**$454**	**$683**	**$862**	**$1,150**

*Ends in 2022 at $16.5m per year (peaks 2017-2019 at $51m).

**Increases from $41m in 2009 to $63m in 2023 per year if this practice continues.

As the gas tax will eventually become obsolete, an alternative funding source that is based on a per mile fee should also be considered in the future. Calculations (in the Appendix) show that a 5.1 cent per mile fee would replace all of the state and federal revenues in the "Sink" scenario except Fares and Other. That fee would rise to 7.6 cents for "Tread", 9.7 cents for "Swim", and 13.0 cents per mile for "Win."

This Plan does not, at this time, make a recommendation on a particular scenario other than state that the path that we are currently on is a losing prospect. The costs of rising up from the Sink scenario are significant, and the costs for achieving RI's vision (Win the Race) are staggering. We, as residents of this state, must lose the notion that transportation is free and that infrastructure can be provided and maintained without somehow drastically increasing revenues. We hope that the Blue Ribbon Panel on Transportation Financing (appointed by Governor Carcieri in March 2008) can use this analysis in its deliberations and make recommendations.

POTENTIAL TRANSPORTATION REVENUE SOURCES

(in millions of dollars per year)

REVENUE SOURCES	Sink	Tread Water	Swim	Win the Race
STATE				
GAS TAX	$132	$205	$273	$341
REGISTRATION FEES	$0	$50	$75	$100
TOLLS	$0	$30	$50	$60
VEHICLE SALES TAX	$0	$80	$80	$80
GAS SALES TAX	$0	$0	$0	$80
GEN OBLIGATION BONDS	$40	$0	$0	$0
FAREBOX	$20	$35	$40	$55
OTHER	$12	$15	$17	$20
STATE Subtotal	**$204**	**$415**	**$535**	**$736**
FEDERAL				
FHWA	$200	$210	$250	$310
NHTSA	$6	$2	$2	$5
FTA	$45	$55	$75	$100
FEDERAL Subtotal	**$251**	**$267**	**$327**	**$415**
TOTAL STATE AND FEDERAL	**$455**	**$682**	**$862**	**$1,151**

TRANSPORTATION PLANNING NEEDS

- Expansion of scope of long range plan to include freight rail and waterborne passenger transportation
- Implementation of Congestion Management Process and Access Management Program
- Participation in RIPTA's Metropolitan Transit Study
- Participation in the reauthorization of SAFETEALU and in efforts to obtain new state sources of revenue for the transportation system
- Monitoring and update of Public Participation Guide
- Continued outreach and public participation, especially to meet environmental justice and equity goals
- Continued integration of ITS and operational strategies into the planning process
- Continued integration of freight into the planning process
- Continued training in air quality standards and conformity

- Continued updates and enhancements to the travel demand model, especially the addition of a transit component, and an updated household travel survey
- Continued acquisition of most recent GIS data including 1 meter digital elevation data for sea-level rise mapping
- Continued emphasis on travel corridor planning to
    - promote improved regional coordination on land use and transportation issues along travel corridors;
    - guide future updates to local comprehensive plans;
    - preserve the safety and operational efficiency of corridor primary roadways through access management;
    - provide transit options with zoning and land use that can sustain viable services
    - encourage the establishment of effective land use or growth management plans for corridors;
    - prevent or minimize development within the pathway of planned transportation facilities;
    - promote development of supporting street, sidewalk, and site circulation systems where land development is desired;
    - apply design, regulatory, and funding strategies to retrofit or revitalize older developed areas; and
    - address site-by-site development impacts on corridor capacity through traffic impact assessment and developer mitigation.

PLEASE NOTE: This needs assessment was conducted as part of *Transportation 2030* and was not updated as part of *Transportation 2035*. The most up-to-date financial information for transportation can be found in the following section, Part 3 – Transportation Financing, which was updated as a part of *Transportation 2035*. Although the numbers listed in the needs assessment in this section are not the most current, the overall findings of the analysis are accurate, therefore the section was retained as it still outlines important policy considerations as we plan for meeting transportation needs into the future.

Part III Financing the Transportation System

PART THREE - TRANSPORTATION FINANCING

FINANCING

The Safe Accountable Flexible Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) required Long Range Plans to have:

> *A financial plan that demonstrates how the adopted statewide transportation plan can be implemented, indicates resources from public and private sources that are reasonably expected to be made available to carry out the plan, and recommends any additional financing strategies for needed projects and programs. The financial plan may include, for illustrative purposes, additional projects that would be included in the adopted statewide transportation plan if reasonable additional resources beyond those identified in the financial plan were available.*

Moving Ahead for Progress in the 21st Century (MAP-21), which was signed into law on July 6, 2012, shifts the perspective of the Long Range Plan toward performance-based planning. The specific requirements for Long Range Plans have not yet been developed or promulgated. Regulations regarding performance-based measures for states will be issued no later than eighteen (18) months after the enactment of the authorization (by December 2013), and states must develop performance-based plans within twelve (12) months of the adoption of these finalized regulations (by December 2014). There are a number of unanswered questions regarding the details of the new planning requirements. These questions are likely to be resolved over the next two to three years, at which time a new Long Range Plan for Rhode Island will need to take shape.

Whether or not it is necessary to meet federal requirements, a financial plan is crucial from the State's perspective. If projects are over programmed, public expectations are raised to a level that cannot possibly be met. In order to prepare an effective and rationally-constrained financial plan, the State needs to know the level of federal funding likely to be available over the long term. This information is important, not only to anticipate the level of match requirement that must be made available from State and other sources, but also to appropriately program projects according to total resources available in any given year. MAP-21 is a two-year authorization: while a two-year authorization is certainly preferable to continued short-term (3 and 6 month) extensions under SAFETEA-LU, there is still a great deal of uncertainty about long-term funding and policy initiatives.

The financial analysis requirements for the Long Range Plan have not been as stringent as those required and implemented in the Transportation Improvement Program (TIP). A financial constraint analysis, which considers cost estimates for individual projects by funding category, is required in the TIP. Although this type of analysis is possible in the short term, the Long Range Plan views transportation infrastructure over the long term (20 years). Beyond the four year horizon of the TIP/STIP and the five year horizon of the State Capital Budget process, individual projects may not have been selected and broad-brush assumptions concerning availability of federal funds must be made.

Since the State's Long Range Plan *Transportation 2030* was adopted in 2008, and amended in 2010, there have been fundamental changes to funding mechanisms and continued focus on financial concerns related to transportation in Rhode Island. The downturn in both the local and national economy has reduced the availability of some revenues, while forcing a focus on future sustainability and improved efficiency and effectiveness. MAP-21 recognizes the need for streamlining programs, consolidating or eliminating more than sixty (60) programs, and simplifying the transportation funding structure while focusing on core issues such as condition of infrastructure, acceleration of project delivery, safety, congestion reduction, and development of transportation alternatives. This section of the Long Range Plan has now been updated to better reflect changes at the State level and efforts to meet Rhode Island's transportation infrastructure needs moving forward toward 2035.

FEDERAL HIGHWAY PROGRAM FUNDING

AVAILABLE FHWA FUNDS

SAFETEA-LU, a five-year act, provided a consistent source of highway funds through the end of FFY 2009. There were ten (10) short term authorizations between the close of FFY 2009 and July 2012. On July 6, 2012, MAP-21 was signed into law and provides highway funds through the close of FFY 2014.

Anticipated Funding for FY 2013-2016 TIP

(millions of dollars)

Resources	2013	2014	2015	2016	Total
Federal Revenue					
Federal Highway	$ 212.0	$ 212.0	$ 212.0	$ 212.0	**$ 848.0**
NHTSA Hazard Elimination	$ 2.0	$ 2.0	$ 2.0	$ 2.0	**$ 8.0**
Total Federal Revenue Available	**$ 214.0**	**$ 214.0**	**$ 214.0**	**$ 214.0**	**$ 856.0**
State Revenue					
GO Bond Proceeds	$ 20.0	$ 13.0	$ 6.0	$ -	**$ 39.0**
RICAP Funds / Other State Funds	$ 20.0	$ 20.0	$ 20.0	$ 20.0	**$ 80.0**
Registration and License Fees	$ -	$ 7.0	$ 14.0	$ 21.0	**$ 42.0**
Total State Revenue Available	**$ 40.0**	**$ 40.0**	**$ 40.0**	**$ 41.0**	**$ 161.0**
Total Federal and State Revenue	**$ 254.0**	**$ 254.0**	**$ 254.0**	**$ 255.0**	**$ 1,017.0**

Although the level of funding to be made available to Rhode Island in the future is not known beyond FFY 2014, there is an expectation that funding will be maintained in the short-term and will increase to meet infrastructure needs in future federal transportation bills. The State Transportation Improvement Program (STIP) used $214 million as the average annual amount of funding available through regular highway formula funding, based on SAFETEA-LU. When MAP-21 was enacted, this figure proved to be accurate in FFY 2013 and FFY 2014 and provided no substantive reason to change the assumption of level funding in FFY 2015 and FFY 2016. The table on the previous page shows the assumption of federal funding made for the four years of the TIP, along with the sources of State matching funds. The table does not include discretionary grants or other awards and carry-forwards.

With an average project cost allocation of 80 percent Federal and 20 percent State, the State funds needed to match $214 million of federal funds would be $53.5 million each year. If the State fully matched the federal funds and all obligation authority translated into actual dollars spent, the total funding available for the highway program each year would be approximately $267.5 million. Rhode Island provides an annual match of approximately $40 million (see also State Funding Resources discussion on Page 3-8) and uses 100 percent federal funding as permitted and appropriate. All federal funding provided to Rhode Island is allocated. Yet, even if all obligation authority was utilized in every year, there would not be sufficient funding to meet the transportation needs and improvements required by Rhode Island businesses and residents. Each time the TIP is updated, implementation of some programmed projects are deferred due to lack of funds. The TIP includes a category of projects which are unprogrammed but important. These projects could be ready for construction should additional funding sources become available.

ADVANCED CONSTRUCTION

In order to maximize the use of available FHWA funds, Rhode Island utilizes the financing technique known as Advanced Construction. Federal regulations require the authorization of all federal highway funds necessary to complete a project at the time the project starts, unless the State utilizes Advanced Construction. Most of the TIP projects are multi-year in nature, so that under normal procedures, federal funds are tied up in projects that won't use the funds for months or perhaps years into the future. Large multi-year projects can greatly reduce the amount of funds available for smaller projects since the total amount of federal funds available to the State on an annual basis is limited.

Advanced Construction is a valuable financing tool where the State is able to phase-in the federal funding to match the anticipated annual project need. Typically, federal funds in the first year for Advanced Constructed projects are authorized only for expected expenditures during that year. In future years, federal funds are applied to projects to cover each year's anticipated expenditures. The application of federal funds in future years is know as Advanced Construction Conversion.

The risk in Advanced Construction is that if federal funds are reduced in future years, the State may not be able to obtain federal reimbursement immediately for project expenditures. To limit the State's liability for Advanced Construction, Rhode Island has chosen to restrict itself to $25 million of total Advanced Construction for the annual Highway Program. As Advanced Construction projects are converted by application of federal funds, new projects are started with Advanced Construction in an equal amount.

MAJOR PROJECT ADVANCEMENT THROUGH GRANT ANTICIPATION REVENUE VEHICLE (GARVEE) FINANCING

In 2003, the General Assembly granted approval for RIDOT to utilize Grant Anticipation Revenue Vehicle (GARVEE) bonds to finance five (5) large projects that otherwise would have taken up a significant portion of the regular highway program. Motor Fuel bonds were used as the State match. The five projects are shown in the chart to the right, along with the percent of total GARVEE/Motor Fuel financing provided to each project.

Rhode Island's GARVEE Projects & Payments

Project	GARVEE Bonds		Motor Fuel Bonds	
I-195 Relocation	$ 298,242,193	48.9%	$ 70,030,018	63.4%
Rt. 403 Extension	$ 92,553,993	15.2%	$ 21,303,541	19.3%
Freight Rail (FRIP)	$ 32,756,843	5.4%	$ 7,958,131	7.2%
Sakonnet Bridge	$ 105,164,324	17.3%	$ 11,159,118	10.1%
Washington Bridge	$ 80,712,037	13.2%	$ -	0.0%
Total	$ 609,429,390	100.0%	$ 110,450,808	100.0%

There have been three GARVEE and Motor Fuel bond series issued: 2003, 2006, and 2009. Each GARVEE issuance is a 12-year series, while each Motor Fuel issuance is an 18-year series. The total remaining debt service to be paid on the GARVEE and Motor Fuel bonds is $533.5 million. The last GARVEE bond will be paid down in FY 2021. The last Motor Fuel bond will be paid down in FY 2027. The table to the right shows the remaining debt service on the five GARVEE projects to be paid down, by year.

The GARVEE funding enabled the State to implement five projects critical to rebuilding the infrastructure of Rhode Island, fostering economic development and improving our quality of life as much as five years earlier than if programmed through non-GARVEE sources.

On the other hand, utilization of the GARVEE financing tool impacts the State's overall ground transportation program by dedicating a significant portion of the State's anticipated future federal highway program allocations to GARVEE bond retirement over an extended period of time. The effect on the remainder of the program would be magnified should the levels of federal highway program funding provided to Rhode Island in the future be reduced for any reason.

Rhode Island's Debt Service Payments

Fiscal Year	GARVEE	Motor Fuel	Total
2013	$ 48.4	$ 7.1	$ 55.5
2014	$ 48.4	$ 7.1	$ 55.5
2015	$ 48.4	$ 7.2	$ 55.6
2016	$ 52.6	$ 7.2	$ 59.8
2017	$ 52.8	$ 6.9	$ 59.7
2018	$ 52.8	$ 6.9	$ 59.7
2019	$ 43.8	$ 6.9	$ 50.7
2020	$ 43.6	$ 6.9	$ 50.5
2021	$ 43.2	$ 6.9	$ 50.1
2022	$ -	$ 6.9	$ 6.9
2023	$ -	$ 6.9	$ 6.9
2024	$ -	$ 6.9	$ 6.9
2025	$ -	$ 6.4	$ 6.4
2026	$ -	$ 6.4	$ 6.4
2027	$ -	$ 3.1	$ 3.1
Total	$ 434.0	$ 99.7	$ 533.7

FEDERAL TRANSIT PROGRAM FUNDING

BUS AND BUS RELATED TRANSIT

RIPTA currently receives funding from formula and discretionary grant programs. RIPTA's formula funding has been steady from year to year, and the state anticipates a similar level of funding under MAP-21. Discretionary funding, which used to include large portions of operating assistance, and then became a key source of capital funding, is now highly unpredictable. Without discretionary funds, buses will be funded at the expense of other important projects, such as facilities improvements and IT investments, which are key to system performance.

Because a portion of FTA funds are available to offset the cost of operations, steady or decreasing funding for transit services may require service reductions. RIPTA's operating costs are affected by inflation, which means that even a steady stream of funding could mean reductions in transit service. Transit service cuts affect all riders who use the service to get to work, medical appointments, and daily errands like grocery shopping. These cuts have the greatest impact on people who do not have other transportation options.

FIXED GUIDEWAY (STREETCAR)

RIPTA recently completed an Alternatives Analysis and Environmental Assessment (EA), the purpose of which was to study the feasibility, cost and benefits of constructing an urban circulator in Providence to help our state and capital city to connect, grow and thrive. The study concluded with the selection of a locally preferred alternative, a streetcar route between College Hill, the Jewelry District, and Upper South Providence thereby connecting major activity centers in Providence's downtown core, spur significant new development, and create an estimated 6,000 jobs over the next 20 years. The next phase is project development, which includes preliminary engineering and final design. The total estimated cost for this phase is $7 million. RIPTA has set aside a portion of these costs with the expectation that as the project develops, additional outside resources will be identified. The total cost to construct the project is $126 million, however a shorter "starter segment" is being evaluated to lower overall project costs and create a more competitive project for federal discretionary funds.

FIXED GUIDEWAY (RAIL)

In an effort to increase mobility in southeastern New England, the State of Rhode Island, in cooperation with the Commonwealth of Massachusetts, entered into the Pilgrim Partnership Agreement (PPA) in 1988 whereby the MBTA provides commuter service to Providence Station. It is a continuation of the bi-state goal to improve mobility within the shared corridor. In 2010, RIDOT and the MBTA entered into the South County Operating Agreement under which, the MBTA extended commuter rail service to T.F. Green Airport in Warwick and Wickford Junction in North Kingstown. New service to Warwick/T.F. Green Airport became fully operational on December 6, 2011 and new service to Wickford Junction Station became fully operational on April 2, 2012.

SAFETEA-LU and its short term extensions, along with MAP-21, have provided funding for the development and operation of commuter rail service in Rhode Island. Rhode Island receives between $3 million and $4 million annually from the Fixed Guideway Rail Modernization funds administered by the Federal Transit Administration (FTA). The New Start discretionary program provides another source of funding from the FTA for commuter rail facilities in the State. Rhode Island has used New Start federal funding for the purchase of MBTA commuter rail coaches and for the design, construction and right-of-way acquisition, of the Pawtucket Layover Facility and the Wickford Junction Station.

For the first three years of service, Rhode Island has used Congestion Mitigation and Air Quality (CMAQ) funds to fund ongoing operating costs of the new commuter rail service. The primary cost for commuter rail operations are payments to AMTRAK for use of the Northeast corridor south of Providence, and for insurance to indemnify AMTRAK from any loss due to incidents related to commuter rail service. MAP-21 extended the eligibility for the use of CMAQ funds to allow for operating costs of services intended to reduce congestion, provide alternative means of access, and improve air quality by taking vehicles off of the roads. Depending on the amount of CMAQ funding available through authorizations beyond September 30, 2014 (the end of MAP-21), state funds may be needed in the future to continue and expand commuter rail service.

The federal fixed guideway apportionments are being used to fund capital maintenance costs of the commuter rail service and for capital projects required by the MBTA operating agreement.

FUTURE PROJECTS (RAIL)

The annual fixed guideway apportionment to Rhode Island is not sufficient to fund the growing demand for commuter rail facilities and service including cost of operations. The following projects have been requested by local communities and/or identified in State planning documents for further study pertaining to commuter rail feasibility: Pawtucket; Kingston and Westerly; Cranston, East Greenwich, West Davisville; Blackstone Valley; and Aquidneck Island.

PAWTUCKET

The City of Pawtucket, through the use of federal and state funding, completed a commuter rail feasibility study in 2007. As part of that study, it was confirmed that Amtrak, the Northeast Corridor owner, required side tracks outside of its two main line tracks at new station stops to load and unload passengers. Because the existing train depot could not accommodate the necessary new sidings without extensive property acquisition and relocation, it was determined that reopening the historic station was not be feasible. The study then evaluated a second site as a potential station location. This site, an existing freight yard, had limited access and required the relocation of the operating freight yard, therefore, this site was eliminated from consideration as well. The City then undertook an analysis of a third site located along the Northeast Corridor opposite the existing freight yard. This site, the preferred station location, offers improved pedestrian and vehicular access, an area for parking, and the potential of utilizing the existing Freight Rail Improvement Project (FRIP) track as a siding for commuter trains.

The City of Pawtucket has estimated that it will cost approximately $53 million in capital investment to construct the station and the required site and track enhancements required by Amtrak at the preferred location. RIDOT, in partnership with the City of Pawtucket, will use $2 million in FTA appropriations for the next phase of station development, environmental assessment and preliminary engineering, at the preferred site. RIDOT will manage the overall project while the City will provide the local match for the FTA funding. As part of the study, the environmental, operational and infrastructure impacts of constructing a commuter rail station along a high speed rail line will be evaluated in more detail and the capital cost estimates for construction will be further refined.

KINGSTON AND WESTERLY

Kingston Station achieved ADA compliance by Amtrak through construction of a pedestrian overpass with elevators and other passenger amenities. In addition to South County Commuter Rail service, there is a possibility of extended service in Westerly from Connecticut along the Shoreline East.

CRANSTON, EAST GREENWICH, AND WEST DAVISVILLE

Commuter rail in Cranston, East Greenwich and West Davisville will require further planning studies to determine the feasibility of rail service, including site location of potential stations, environmental impacts, and potential rail operations.

BLACKSTONE VALLEY

A study on commuter rail in the Blackstone Valley was completed that estimated ridership from Woonsocket to Providence. A follow-up study was conducted to determine feasibility, costs, benefits, ridership, service levels, and potential transit oriented development along an intrastate rail transit corridor from Woonsocket to Warwick.

AQUIDNECK ISLAND

Should commuter rail service be extended from Boston to Fall River, a subsequent extension to Aquidneck Island may become a possibility. This extension would also require a crossing at the Sakonnet River crossing. On island service could be initiated independently of Fall River service or a Sakonnet River crossing. The Aquidneck Island Planning Commission, in conjunction with the RI DOT and the RI Statewide Planning Program, recently completed a Transportation Study for the island. That study recommended maintaining an active Newport Secondary Rail Corridor including preserving the rail corridor as a contiguous right-of-way, working with adjacent developers to eliminate existing or future encroachments (i.e. roadways, drainage, structure, etc.) as part of the local development approval process, promote continued track maintenance/grade-crossing improvements to retain Class 1 rating, and increase potential use of appropriate/feasible seasonal/year-round passenger rail uses of corridor.

The State is currently in the process of completing a State Rail Plan which will be utilized to prioritize future rail projects for study and implementation.

STATE FUNDING RESOURCES

MOTOR VEHICLE FUEL TAX (GAS TAX)

The State levies a 32 cent per gallon tax on motor vehicle fuels, which was last raised in 2009. In addition, Rhode Island levies a one-cent per gallon surcharge which was originally intended to fund the Underground Storage Tank (UST) environmental remediation fund. The revenue generated by this "gas tax" increases and decreases in proportion to the number of gallons of fuel sold. According to a study by the Brookings Institution, receipts from federal and state gas taxes nation-wide rose beginning in the 1970s, but they reached a plateau in the late 1990s. The issue of reduced revenues from the gas tax is not a Rhode Island issue alone, but a national problem, bolstered by the push to reduce congestion, promote alternate modes of transportation and alternative fuels, and improve fuel economy in passenger vehicles.

In 1992, Rhode Island had a 26 cent per gallon gas tax, which over the course of 20 years rose to 32 cents, an increase of 23.1 percent. Rhode Island's total gas tax receipts have not kept pace with increasing costs for transportation infrastructure, instead falling sharply in the past decade. With citizens driving less and

cars becoming more fuel efficient, the State, and by extension its transportation functions, currently receive $16 million, or 11 percent, less per year than in 2007. Whereas in 2007, the State received $4.7 million for each penny of gas tax, in 2012, the State receives only $4.2 million for each penny. At the same time, Rhode Island's transportation program expenses were subject to the decreased buying power caused by inflation. Prior to FY 2010, at least a portion of the gas tax revenue was deposited in the General Fund, but in recent years policy-makers at the State level have redirected the funding to meet transportation needs. The table below shows the FY2012 anticipated gas tax distribution based on current law and an estimated yield of $4.2 million per penny.

RIDOT'S USE OF GAS TAX FUNDS

The fuel tax allocated to RIDOT funds the Department's annual operating costs and pays for debt service on bonds issued for highway improvements. Operating costs include nearly all Department expenses that are not part of the Highway Improvement Program and are not otherwise covered by federal grants. The gas tax pays for such work as snow removal, litter pickup, catch basin cleaning, bridge washing, grass cutting and minor road maintenance and repair as well as the agency's administrative costs.

FY 2012 Anticipated Gas Tax Distribution

Recipient	Pennies	Yield in Millions
RIDOT	19.75	$ 83.4
GARVEE Program	2.00	$ 8.4
RIPTA	9.75	$ 41.2
DHS	1.00	$ 4.2
Underground Storage	0.50	$ 2.1
Total	33.00	$ 139.3

RIDOT's expenditures for operating costs are forecast to increase each year. There are a number of factors which contribute to escalating costs, including salaries and benefits for personnel, cost of materials, severity and duration of winter storms, equipment repairs and maintenance, utility costs, and other variables that are dependent on the national and local economy.

Until the General Assembly and Governor took action as part of the FY 2012 and FY 2013 State Budgets, debt service had been forecast to increase on an annual basis as additional bonds were issued to match FHWA funds. Typically, $40 million in bonds were issued annually to match FHWA capital funds and to pay for projects with 100 percent State costs. Reliance on bond funds for matching federal funds was a dangerous practice that threatened to severely limit available resources for operating as debt service costs grew to a disproportionate share of gas tax revenue, and gas tax revenue declined. Prior to the actions of policymakers, the continued issuance of bonds were projected to result in debt service of $62.93 million in 2023, creating an estimated $30 million gap in RIDOT's operating budget.

Several steps have been taken in the last two years to address the issue of bond borrowing as a match for Federal funds and to smooth the sharp peak that had been anticipated in debt service over the next decade, as a result of prior borrowing. These steps are detailed below.

INCREASE REGISTRATION AND LICENSE FEES, ALLOCATE RHODE ISLAND CAPITAL PLAN (RICAP) FUNDS

During the 2011 General Assembly session, legislation was enacted that will gradually replace bond borrowing with registration and license fees, along with Rhode Island Capital Plan (RICAP) funds. These funds will be collected in the Rhode Island Highway Maintenance Trust Fund. Registration and license fee increases will be phased-in over a three year period, and by 2016 there will be no bond funds required to match federal funds. The table below shows the shift from bond funds to new State sources.

Shift from Bond Funds to New State Funding Sources

FY 2012 - FY 2018

Source	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Increase 2-Year Registrations by $30	$ -	$ -	$ 3.9	$ 7.8	$ 11.7	$ 11.7	$ 11.7
Increase 1-Year Registrations by $15	$ -	$ -	$ 1.6	$ 3.2	$ 4.8	$ 4.8	$ 4.8
Increase License Fees by $30	$ -	$ -	$ 1.5	$ 3.0	$ 4.5	$ 4.5	$ 4.5
Rhode Island Capital Plan Fund (RICAP)	$ -	$ 20.0	$ 20.0	$ 20.0	$ 20.0	$ 20.0	$ 20.0
Total New Sources	$ -	$ 20.0	$ 27.0	$ 34.0	$ 41.0	$ 41.0	$ 41.0
State Match Needed	$ 40.0	$ 40.0	$ 40.0	$ 40.0	$ 40.0	$ 40.0	$ 40.0
Balance Required from Bonds	$ 40.0	$ 20.0	$ 13.0	$ 6.0	$ -	$ -	$ -

REFINANCING OF GENERAL OBLIGATION BONDS AND LIMITED STATE DEBT RELIEF

The State Budget Office refinanced existing General Obligation bonds to soften a sharp peak in debt service payments. Although the refinancing has a net cost of $5 million over the full term, the immediate savings are substantial, as shown in the table to the right.

At the same time, the General Assembly included $8 million in General Revenue for RIDOT operations in FY 2013 to offset reduced gas tax revenue and increased operating costs. The Governor has proposed greater debt relief in his five-year plan ($10 million in FY 2014; $20 million in FY 2015; $30 million in FY 2016; and $40 million in FY 2017), but the funds do not have a specific source and have not yet been allocated for transportation purposes.

The table on the right shows the funds expected to be provided to RIDOT from the gas tax through 2035. The table also shows the expected RIDOT expenditures out of the gas tax (debt service and operating costs) for the same period, based on revised debt service costs after refinancing and the elimination of future bonds. Gas tax receipts are projected to experience slow growth beginning in FY 2015, rising from a yield of $4.2 million per penny in FY 2013 to a yield of $4.4 million per penny in FY 2035.

RIDOT Operating Revenue & Costs

Fiscal Year	Gas Tax Revenue	Debt Service	Available for Operations
2013	$ 91.8	$ 41.2	$ 50.6
2014	$ 91.8	$ 38.5	$ 53.3
2015	$ 92.3	$ 45.0	$ 47.3
2016	$ 92.4	$ 47.2	$ 45.2
2017	$ 92.6	$ 46.8	$ 45.8
2018	$ 92.6	$ 40.7	$ 51.9
2019	$ 92.7	$ 39.7	$ 53.0
2020	$ 92.7	$ 36.8	$ 55.9
2021	$ 92.8	$ 43.0	$ 49.8
2022	$ 92.8	$ 40.2	$ 52.7
2023	$ 92.9	$ 39.6	$ 53.3
2024	$ 92.9	$ 31.2	$ 61.8
2025	$ 93.0	$ 28.3	$ 64.7
2026	$ 93.0	$ 28.3	$ 64.7
2027	$ 93.1	$ 25.0	$ 68.1
2028	$ 93.1	$ 23.4	$ 69.8
2029	$ 93.2	$ 16.9	$ 76.3
2030	$ 93.2	$ 16.8	$ 76.5
2031	$ 93.3	$ 7.3	$ 86.0
2032	$ 93.3	$ 7.3	$ 86.0
2033	$ 93.3	$ 3.5	$ 89.9
2034	$ 93.4	$ 1.6	$ 91.8
2035	$ 93.4	$ 0.5	$ 92.9
Total	$ 2,135.6	$ 648.8	$ 1,487.3

RIPTA'S USE OF STATE FUNDS

RIPTA uses state gas tax funding to support all aspects of its annual budget, operations, maintenance, and local shares of grant programs. While RIPTA has other sources of revenue, such as passenger revenue, contract revenue for services, advertising/rent, and federal funds, gas tax revenue is the largest single share, providing over 40 percent of the agency's funds in recent years.

While RIPTA has been making many investments in efficiency, bus service requires one driver for each vehicle. The agency's expenditures have typically been 70 percent labor, and expenditures are budgeted to increase each year due to inflationary pressures on the cost of labor. Therefore changes in gas tax revenue directly affect the agency's ability to provide service.

In responding to budget challenges, RIPTA must act in accordance with labor agreements, and therefore changes in service can only be implemented at one of three times during the year. RIPTA is required by federal and state regulations to hold public hearings before making major service cuts or fare increases. Taken together, these procedural constraints mean that if RIPTA's budget is reduced in June, RIPTA will not be able to cut its operating costs until January of the following year. The agency is then faced with trying to spread an annualized level of budget reduction over the space of half a year.

When gas prices increase sharply, consumers tend to limit their purchase of gasoline. At the same time, ridership tends to increase as people turn to a less expensive alternative to cars. Therefore an increase in gasoline costs has a two-fold effect on RIPTA's budget: high gas prices both decrease gas tax revenue and increase the need for service.

Transit bonding levels vary from year to year, depending on the need for bus replacement. In the past, RIPTA has used bond funds to meet Federal match requirements for the procurement of buses. RIPTA makes quarterly payments on the debt service for these bonds. Current repayments make up approximately 1 percent of the agency's annual operating budget. In moving forward, the General Assembly has discontinued the practice of bonding, replacing bond funds with State Fleet Revolving Loan Funds. The State Fleet Revolving Loan Fund requires repayment by RIPTA, but the intent of the General

Assembly and the Administration was to provide a source of matching funds that would not require repayment. At this time, RIPTA anticipates that repayments will continue to be an ongoing part of the agency's budget. It should be noted that RICAP funds do not need to be repaid by RIPTA.

Another source of capital match for RIPTA is the Capital Revolving Loan Fund. The fund is used by RIPTA to match the cost of major capital projects. The funds are repaid by at a rate no less than 1 percent below the market rate. Other sources of match currently used are gas tax proceeds (to meet certain capital match and preventive maintenance requirements) and the RI Capital Fund, when appropriated for specific projects.

The combination of sources may not be enough to meet RIPTA's annual match requirements. This can cause delay in project implementation and provision of services. Tight operating budgets sometimes prevent RIPTA from providing the local match needed to utilize the available grant funds.

RIPTA has received, almost annually, discretionary grants to purchase buses and build facilities. These grants are not a guaranteed source of funding, which, considering RIPTA's budget difficulties could cause major capital funding shortfalls if discretionary funds are no longer available.

ALTERNATIVES TO ADDRESS STATE FUNDING SHORTFALL

Over the past decade, construction costs increased dramatically with no corresponding increase in funding sources. As a result, many projects have been deferred to future years, and the "project pipeline" remains full. This FY 2013-2016 TIP includes an appendix to show recommended unprogrammed projects, planned to be undertaken in future years, beyond the lifespan of the FY 2013 - 2016 TIP.

Two panels, detailed below, have been convened and two reports have been produced since 2008 that have impacted transportation funding and have helped to ensure that some fundamental changes have been enacted. Although progress has been made in reaching the goals iterated by the panels, there is still a significant shortfall in funding and further action required to preserve our transportation infrastructure and services.

BLUE RIBBON PANEL ON TRANSPORTATION FUNDING (2008)

In order to address the dire funding shortfall faced by the State, former Governor Carcieri convened a Blue Ribbon Task Force to investigate potential new revenue sources. The Panel concluded that RIDOT would need to double its investment in annual spending on infrastructure improvement – an estimated $300 million – each year for the next 10 years just to bring the current network of roads in bridges to a state of good repair. The report does include funding scenarios for this level of investment and also a less-aggressive scenario of increasing the yearly investment in transportation by 50 percent, or about $150 million.

The Blue Ribbon Panel report made the following recommendations to restore and retain the State's highway system bridges and roads in good condition:

- Repair or replace all structurally deficient local and state-owned bridges at the rate of about 26 bridges per year.

- Complete more than 20 major bridge and highway projects, each having a cost greater than $10 million.
- Totally reconstruct 20 lane-miles of roadway per year.
- Resurface 120 lane-miles of roadway, including replacement of approximately 34 miles of sidewalk associated with these projects.
- Fully fund preventive maintenance activities essential to the cost-effective management of the State's roads and bridges including: bridge painting and washing, deck joint repair, overlay and crack sealing of roadways.
- Fully fund essential operations and maintenance activities including: bridge inspection, drainage improvements, pavement striping, traffic signal repair and replacement, signing and lighting improvements and repair, replacement of damaged hardware, landscaping maintenance and improvements.
- Fully fund essential roadway maintenance activities such as snow removal, grass cutting, minor highway and bridge repairs, and drainage structure repair and cleaning.

SENATE COMMISSION ON SUSTAINABLE TRANSPORTATION FUNDING

In the spring of 2011, the Rhode Island Senate convened the Senate Commission on Sustainable Transportation Funding. The Commission held six (6) meetings, which included presentations from staff members of the Senate Fiscal Office, the Rhode Island Department of Transportation (RIDOT), the Department of Administration's Division of Planning, the Rhode Island Public Transit Authority (RIPTA), the Rhode Island Turnpike and Bridge Authority (RITBA), and the Federal Highway Administration (FHWA). The Commission also examined transportation funding trends across states, among quasi-public agencies, and at the federal level.

The Commission established transportation funding priorities and listed transportation funding opportunities.

Transportation Funding Priorities

- Eliminate bonding to provide the state match for federal funds.
- No new bonds: replace with alternate sources.
- Eliminate debt service payments and reallocate gas tax revenue for operations and maintenance.
- Provide additional funding for Department of Transportation operations, maintenance, and capital.
- Provide additional funding for local roads and RIPTA.

Transportation Funding Opportunities

- Establish a Transportation Trust Fund to implement the stated priorities.
- Increase motor vehicle registration and license fees and dedicate solely to transportation in accordance with the stated priorities.

- Dedicate transportation-related fees to the Transportation Trust Fund in accordance with the stated priorities. The Commission recognizes that this creates a funding gap in the General Fund.
- Consider tolls on the I-95 corridor, or other locations, after appropriate impact study.
- Consider commercial enterprise at highway rest stops in Rhode Island.
- Advocate for increased funding in the upcoming federal transportation authorization.
- Consider seeking public/private partnerships where feasible.
- Continue to examine new methods of funding transportation projects.
- Consider conducting an in-depth and comprehensive Vehicle Miles Traveled (VMT) fee study, including economic, privacy, and environmental factors.

There is a clear understanding that the funding provided through both existing State and Federal sources is insufficient to meet our transportation infrastructure needs. Furthermore, Rhode Island is not alone: every state is facing an uncertain future for Federal transportation funding, and every state has unmet transportation infrastructure needs. The American Association of State Highway and Transportation Officials (AASHTO) has estimated an annual funding gap of $135 billion at the national level.

Rhode Island has taken the first, formative steps to resolve the funding gap by passage of a measure to eliminate future bond borrowing and replace the State match with revenue from more sustainable sources. Further change is needed, a fact recognized by both the Executive and Legislative branches of government in Rhode Island. Several proposals have been made to increase and diversify revenue streams: these proposals are being analyzed in an effort to find the most equitable and sustainable sources of funding for future transportation infrastructure needs.

FISCAL CONSTRAINT ANALYSIS

The table below shows Rhode Island's historic and projected Highway and Transit Program funding allocations from 2009 – 2035. For 2013 and beyond, the table is based on anticipated FHWA, FTA, and State funding. The funding allocation is displayed by major TIP program and project.

ALLOCATION OF HIGHWAY FUNDS TO PROJECT CATEGORIES

(Federal and State Funds Shown - $ Millions)

Category / Project	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Total 2011 to 2035
Expenditures	Actual		Planned																									
Administrative	$ 0.82	$ 0.83	$ 1.10	$ 1.10	$ 1.10	$ 1.10	$ 1.10	$ 1.10	$ 1.13	$ 1.17	$ 1.20	$ 1.20	$ 1.24	$ 1.28	$ 1.31	$ 1.35	$ 1.39	$ 1.44	$ 1.48	$ 1.52	$ 1.57	$ 1.62	$ 1.66	$ 1.71	$ 1.77	$ 1.82	$ 1.87	**$ 34.33**
Project Change Orders	$ 4.19	$ -	$ 10.00	$ 10.00	$ 8.00	$ 8.00	$ 8.00	$ 8.00	$ 8.24	$ 8.49	$ 8.74	$ 8.74	$ 9.00	$ 9.27	$ 9.55	$ 9.84	$ 10.13	$ 10.44	$ 10.75	$ 11.07	$ 11.41	$ 11.75	$ 12.10	$ 12.46	$ 12.84	$ 13.22	$ 13.62	**$ 253.68**
Flood Emergency Projects	$ -	$ 18.63	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Bike/Pedestrian Program	$ 1.77	$ 1.97	$ 4.73	$ 3.70	$ 12.41	$ 9.13	$ 5.13	$ 5.14	$ 5.29	$ 5.45	$ 5.62	$ 5.62	$ 5.79	$ 5.96	$ 6.14	$ 6.32	$ 6.51	$ 6.71	$ 6.91	$ 7.11	$ 7.33	$ 7.55	$ 7.77	$ 8.01	$ 8.25	$ 8.50	$ 8.75	**$ 169.82**
Bridge Program	$ 54.78	$ 42.75	$ 57.55	$ 49.79	$ 39.50	$ 41.50	$ 41.75	$ 46.00	$ 47.38	$ 48.80	$ 50.27	$ 51.77	$ 53.33	$ 62.00	$ 77.00	$ 79.31	$ 81.69	$ 84.14	$ 86.66	$ 89.26	$ 91.94	$ 94.70	$ 97.54	$ 100.47	$ 103.48	$ 106.59	$ 109.78	**$ 1,792.21**
CMAQ Program	$ 4.12	$ 8.61	$ 10.80	$ 9.00	$ 10.30	$ 10.30	$ 10.30	$ 10.30	$ 10.61	$ 10.93	$ 11.26	$ 11.26	$ 11.59	$ 11.94	$ 12.30	$ 12.67	$ 13.05	$ 13.44	$ 13.84	$ 14.26	$ 14.69	$ 15.13	$ 15.58	$ 16.05	$ 16.53	$ 17.02	$ 17.54	**$ 320.66**
Enhancement Program	$ 4.60	$ 3.36	$ 4.20	$ 4.00	$ 4.00	$ 4.00	$ 4.00	$ 4.00	$ 4.12	$ 4.24	$ 4.37	$ 4.37	$ 4.50	$ 4.64	$ 4.78	$ 4.92	$ 5.07	$ 5.22	$ 5.38	$ 5.54	$ 5.70	$ 5.87	$ 6.05	$ 6.23	$ 6.42	$ 6.61	$ 6.81	**$ 125.04**
Highway Program	$ 20.96	$ 16.15	$ 11.30	$ 16.00	$ 39.40	$ 26.75	$ 22.30	$ 11.50	$ 11.85	$ 12.20	$ 12.57	$ 12.57	$ 12.94	$ 13.33	$ 13.73	$ 14.14	$ 14.57	$ 15.00	$ 15.46	$ 15.92	$ 16.40	$ 16.89	$ 17.39	$ 17.92	$ 18.45	$ 19.01	$ 19.58	**$ 417.16**
Interstate Program	$ 23.60	$ 7.27	$ 16.50	$ 32.50	$ 13.50	$ 12.50	$ 15.50	$ 18.00	$ 18.54	$ 19.10	$ 19.67	$ 19.67	$ 20.26	$ 20.87	$ 21.49	$ 22.14	$ 22.80	$ 23.49	$ 24.19	$ 24.92	$ 25.66	$ 26.43	$ 27.23	$ 28.04	$ 28.88	$ 29.75	$ 30.64	**$ 562.27**
GARVEE Debt Service	$ 45.18	$ 47.18	$ 48.38	$ 48.39	$ 48.40	$ 48.40	$ 48.40	$ 52.60	$ 52.80	$ 52.80	$ 43.80	$ 43.50	$ 43.20	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ 530.67**
Planning	$ 7.56	$ 6.71	$ 5.80	$ 5.80	$ 5.80	$ 5.80	$ 5.80	$ 6.00	$ 6.18	$ 6.37	$ 6.56	$ 6.56	$ 6.75	$ 6.96	$ 7.16	$ 7.38	$ 7.60	$ 7.83	$ 8.06	$ 8.31	$ 8.55	$ 8.81	$ 9.08	$ 9.35	$ 9.63	$ 9.92	$ 10.21	**$ 186.26**
Pavement Management Program	$ 61.41	$ 26.76	$ 51.66	$ 28.41	$ 26.80	$ 31.00	$ 30.00	$ 30.00	$ 30.90	$ 31.83	$ 32.78	$ 32.78	$ 33.77	$ 34.78	$ 35.82	$ 36.90	$ 38.00	$ 39.14	$ 40.32	$ 41.53	$ 42.77	$ 44.06	$ 45.38	$ 46.74	$ 48.14	$ 49.59	$ 51.07	**$ 954.16**
Study & Development	$ -	$ -	$ 1.00	$ 1.00	$ 1.50	$ 1.50	$ 1.50	$ 1.50	$ 3.00	$ 3.09	$ 3.18	$ 3.18	$ 3.28	$ 3.38	$ 3.48	$ 3.58	$ 3.69	$ 3.80	$ 3.91	$ 4.03	$ 4.15	$ 4.28	$ 4.41	$ 4.54	$ 4.67	$ 4.81	$ 4.96	**$ 81.43**
Traffic Safety Program	$ 27.13	$ 19.02	$ 30.00	$ 30.00	$ 30.50	$ 30.50	$ 33.50	$ 30.50	$ 31.42	$ 32.36	$ 33.33	$ 33.33	$ 34.33	$ 35.36	$ 36.42	$ 37.51	$ 38.64	$ 39.80	$ 40.99	$ 42.22	$ 43.49	$ 44.79	$ 46.13	$ 47.52	$ 48.94	$ 50.41	$ 51.92	**$ 953.89**
I-195 Relocation	$ -	$ -	$ 37.12	$ 28.80	$ 37.90	$ 22.70	$ 8.60	$ 1.10	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ 136.22**
Washington Pedestrian Bridge	$ -	$ -	$ -	$ -	$ 12.50	$ 7.88	$ 0.50	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ 20.88**
I-95 Pawtucket Bridge 550	$ 1.23	$ 65.28	$ 11.50	$ 11.50	$ 20.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ 43.00**
Providence Viaduct	$ -	$ 3.45	$ 3.00	$ 4.00	$ 11.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 10.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ 188.00**
Sakonnet River Bridge	$ 4.35	$ 6.17	$ 18.90	$ 14.30	$ 22.50	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ 55.70**
Other Potential Projects	$ -	$ -	$ -	$ -	$ 8.90	$ 6.72	$ 10.32	$ 10.36	$ 5.60	$ 2.50	$ 11.32	$ 12.94	$ 10.37	$ 64.20	$ 57.61	$ 53.50	$ 49.42	$ 45.05	$ 40.60	$ 35.74	$ 30.80	$ 25.20	$ 21.40	$ 17.20	$ 12.00	$ 6.50	$ 0.80	**$ 539.05**
Total	**$ 261.70**	**$ 274.14**	**$ 323.54**	**$ 298.29**	**$ 354.01**	**$ 287.78**	**$ 266.70**	**$ 256.10**	**$ 257.06**	**$ 259.32**	**$ 264.66**	**$ 267.49**	**$ 270.35**	**$ 283.96**	**$ 286.80**	**$ 289.56**	**$ 292.56**	**$ 295.49**	**$ 298.55**	**$ 301.43**	**$ 304.46**	**$ 307.07**	**$ 311.72**	**$ 316.23**	**$ 320.01**	**$ 323.75**	**$ 327.56**	**$ 7,364.42**
Revenues																												
FHWA Earmark Funds			$ 6.00	$ 1.00	$ 30.00	$ 3.20	$ 2.60	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ 42.80**
Flood Funds Recovered			$ 17.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ 17.00**
Estimated FHWA Federal Funds			$ 228.00	$ 228.00	$ 214.00	$ 214.00	$ 214.00	$ 214.00	$ 216.14	$ 218.30	$ 220.48	$ 222.69	$ 224.92	$ 227.17	$ 229.44	$ 231.73	$ 234.05	$ 236.39	$ 238.75	$ 241.14	$ 243.55	$ 245.99	$ 248.45	$ 250.93	$ 253.44	$ 255.98	$ 258.54	**$ 5,810.07**
TIGER Grant					$ 10.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ 10.00**
GARVEE Proceeds			$ 37.12	$ 28.80	$ 42.70	$ 7.90	$ 9.10	$ 1.10	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ 126.72**
Land Sales			$ -	$ -	$ 17.30	$ 22.70	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ 40.00**
State Match Bonds			$ 35.40	$ 40.50	$ 20.00	$ 13.00	$ 7.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ 115.90**
State Match RICAP Funds			$ -	$ -	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	**$ 460.00**
State Match Registration Fees			$ -	$ -	$ -	$ 7.00	$ 14.00	$ 21.00	$ 21.00	$ 21.00	$ 21.00	$ 21.00	$ 21.00	$ 21.00	$ 21.00	$ 21.00	$ 21.00	$ 21.00	$ 21.00	$ 21.00	$ 21.00	$ 21.00	$ 21.00	$ 21.00	$ 21.00	$ 21.00	$ 21.00	**$ 441.00**
State Other Funds			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3.20	$ 3.80	$ 4.40	$ 15.80	$ 16.40	$ 16.90	$ 17.60	$ 18.10	$ 18.70	$ 19.30	$ 19.90	$ 20.10	$ 22.30	$ 24.30	$ 25.60	$ 26.70	$ 28.10	**$ 301.20**
Total			**$ 323.52**	**$ 298.30**	**$ 354.00**	**$ 287.80**	**$ 266.70**	**$ 256.10**	**$ 257.14**	**$ 259.30**	**$ 264.68**	**$ 267.49**	**$ 270.32**	**$ 283.97**	**$ 286.84**	**$ 289.63**	**$ 292.65**	**$ 295.49**	**$ 298.45**	**$ 301.44**	**$ 304.45**	**$ 307.09**	**$ 311.75**	**$ 316.23**	**$ 320.04**	**$ 323.68**	**$ 327.64**	**$ 7,335.60**

ALLOCATION OF COMMUTER FUNDS TO PROJECT CATEGORIES
(Federal and State Funds Shown - $ Millions)

Category / Project	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Total 2011 to 2035
Expenditures																												
Operations	$ -	$ -	$ 3.62	$ 5.10	$ 5.00	$ 5.15	$ 5.30	$ 5.46	$ 5.63	$ 5.80	$ 5.97	$ 6.15	$ 6.33	$ 6.52	$ 6.72	$ 6.92	$ 7.13	$ 7.34	$ 7.56	$ 7.79	$ 8.02	$ 8.26	$ 8.51	$ 8.77	$ 9.03	$ 9.30	$ 9.58	**$ 170.98**
Stations	$ 14.22	$ 27.90	$ -	$ -	$ -	$ -	$ 1.55	$ 3.00	$ 10.00	$ 18.00	$ 15.00	$ 3.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ 50.55**
Facilities & Equipment	$ 0.46	$ -	$ -	$ 3.96	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ 3.96**
South County Rail Support Projects - Either Stations or Equipment	$ -	$ -	$ -	$ -	$ 3.00	$ 3.09	$ 3.18	$ 3.28	$ 3.38	$ 3.48	$ 3.58	$ 3.69	$ 3.80	$ 3.91	$ 4.03	$ 4.15	$ 4.28	$ 4.41	$ 4.54	$ 4.67	$ 4.81	$ 4.96	$ 5.11	$ 5.26	$ 5.42	$ 5.58	$ 5.75	**$ 97.36**
Total	**$ 14.68**	**$ 27.90**	**$ 3.62**	**$ 9.06**	**$ 8.00**	**$ 8.24**	**$ 10.04**	**$ 11.74**	**$ 19.00**	**$ 27.27**	**$ 24.55**	**$ 12.84**	**$ 10.13**	**$ 10.44**	**$ 10.75**	**$ 11.07**	**$ 11.41**	**$ 11.75**	**$ 12.10**	**$ 12.46**	**$ 12.84**	**$ 13.22**	**$ 13.62**	**$ 14.03**	**$ 14.45**	**$ 14.88**	**$ 15.33**	**$ 322.85**
Revenues																												
ARRA	$ 0.46	$ 4.35	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
New Start	$ 2.73	$ 15.56	$ -	$ -	$ -	$ -	$ 1.24	$ 2.40	$ 4.00	$ 8.00	$ 7.40	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ 23.04**
Rail Modernization	$ 8.65	$ 3.28			$ 2.40	$ 2.47	$ 2.55	$ 2.62	$ 2.70	$ 2.78	$ 2.87	$ 2.95	$ 3.04	$ 3.13	$ 3.23	$ 3.32	$ 3.42	$ 3.52	$ 3.63	$ 3.74	$ 3.85	$ 3.97	$ 4.09	$ 4.21	$ 4.33	$ 4.46	$ 4.60	**$ 77.89**
CMAQ Funds Transferred to FTA	$ -	$ -	$ 3.62	$ 5.10	$ 5.00	$ 1.00	$ -	$ -	$ 2.00	$ 2.00	$ 2.00	$ 2.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ 22.72**
TCSP/Other Discretionary	$ -	$ -	$ -	$ 3.96	$ -	$ -	$ -	$ -	$ 1.00	$ 1.00	$ 1.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ 6.96**
Local/Private/Other	$ -	$ 0.49	$ -	$ -	$ -	$ -	$ 0.31	$ 0.60	$ 2.00	$ 5.00	$ 2.60	$ 1.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ 11.51**
State Operating Subsidy	$ -	$ -	$ -	$ -	$ -	$ 4.15	$ 5.30	$ 5.46	$ 5.63	$ 5.80	$ 5.97	$ 6.15	$ 6.33	$ 6.52	$ 6.72	$ 6.92	$ 7.13	$ 7.34	$ 7.56	$ 7.79	$ 8.02	$ 8.26	$ 8.51	$ 8.77	$ 9.03	$ 9.30	$ 9.58	**$ 156.26**
State Match GO Bonds/RICAP Funds	$ 2.84	$ 4.22	$ -	$ -	$ -	$ -	$ -	$ -	$ 1.00	$ 2.00	$ 2.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ 5.00**
MBTA Match	$ -	$ -	$ -	$ -	$ 0.60	$ 0.62	$ 0.64	$ 0.66	$ 0.68	$ 0.70	$ 0.72	$ 0.74	$ 0.76	$ 0.78	$ 0.81	$ 0.83	$ 0.86	$ 0.88	$ 0.91	$ 0.93	$ 0.96	$ 0.99	$ 1.02	$ 1.05	$ 1.08	$ 1.12	$ 1.15	**$ 19.47**
Total	**$ 14.68**	**$ 27.90**	**$ 3.62**	**$ 9.06**	**$ 8.00**	**$ 8.24**	**$ 10.04**	**$ 11.74**	**$ 19.00**	**$ 27.27**	**$ 24.55**	**$ 12.84**	**$ 10.13**	**$ 10.44**	**$ 10.75**	**$ 11.07**	**$ 11.41**	**$ 11.75**	**$ 12.10**	**$ 12.46**	**$ 12.84**	**$ 13.22**	**$ 13.62**	**$ 14.03**	**$ 14.45**	**$ 14.88**	**$ 15.33**	**$ 322.85**

ALLOCATION OF FEDERAL TRANSIT ADMINISTRATION FUNDS TO PROJECT CATEGORIES (Federal and State Funds Shown - $ Millions)																															
Category / Project	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**Total 2011 to 2035**
Expenditures																															
5307 Urbanized Area Formula	$ 34.10	$ 33.91	$ 33.80	$ 34.08	$ 33.80	$ 34.14	$ 34.49	$ 34.83	$ 35.11	$ 35.38	$ 35.75	$ 36.11	$ 36.48	$ 36.85	$ 37.23	$ 37.60	$ 37.99	$ 38.37	$ 38.76	$ 39.16	$ 39.55	$ 39.95	$ 40.36	$ 40.77	$ 41.19	$ 41.61	$ 42.03	**$ 935.38**
5310 Elderly/Disabled Vehicles	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	**$ 20.00**
5311 NonUrbanized Area Formula	$ 1.16	$ 1.16	$ 1.16	$ 1.23	$ 1.23	$ 1.25	$ 1.25	$ 1.28	$ 1.29	$ 1.31	$ 1.32	$ 1.33	$ 1.35	$ 1.36	$ 1.37	$ 1.39	$ 1.40	$ 1.41	$ 1.43	$ 1.44	$ 1.46	$ 1.47	$ 1.49	$ 1.50	$ 1.52	$ 1.53	$ 1.55	**$ 34.30**
5316 Job Access Reverse Commute	$ 1.20	$ 1.11	$ 1.14	$ 1.15	$ 1.14	$ 1.15	$ 1.16	$ 1.17	$ 1.18	$ 1.20	$ 1.21	$ 1.22	$ 1.23	$ 1.25	$ 1.26	$ 1.27	$ 1.28	$ 1.30	$ 1.31	$ 1.32	$ 1.34	$ 1.35	$ 1.36	$ 1.38	$ 1.39	$ 1.40	$ 1.42	**$ 31.57**
5317 New Freedom	$ 0.45	$ 0.45	$ 0.45	$ 0.45	$ 0.45	$ 0.46	$ 0.46	$ 0.47	$ 0.47	$ 0.48	$ 0.48	$ 0.49	$ 0.49	$ 0.50	$ 0.50	$ 0.51	$ 0.51	$ 0.52	$ 0.52	$ 0.53	$ 0.53	$ 0.54	$ 0.54	$ 0.55	$ 0.56	$ 0.56	$ 0.57	**$ 12.61**
5309 Bus and Bus Facility (discretionary)	$ 6.60	$ 0.98	$ -	$ 1.53	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ 1.53**
5308 Clean Fuel	$ 8.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Total	**$ 52.31**	**$ 38.41**	**$ 37.35**	**$ 39.23**	**$ 37.42**	**$ 37.80**	**$ 38.17**	**$ 38.56**	**$ 38.86**	**$ 39.17**	**$ 39.56**	**$ 39.95**	**$ 40.35**	**$ 40.75**	**$ 41.16**	**$ 41.57**	**$ 41.98**	**$ 42.40**	**$ 42.82**	**$ 43.25**	**$ 43.68**	**$ 44.11**	**$ 44.55**	**$ 45.00**	**$ 45.45**	**$ 45.90**	**$ 46.36**	**$ 1,035.38**
Revenues																															
Formula FTA Grant Programs	$ 29.66	$ 29.26	$ 29.59	$ 29.18	$ 29.27	$ 29.57	$ 29.85	$ 30.16	$ 30.46	$ 30.77	$ 31.07	$ 31.38	$ 31.70	$ 32.02	$ 32.34	$ 32.66	$ 32.99	$ 33.32	$ 33.65	$ 33.99	$ 34.32	$ 34.67	$ 35.01	$ 35.36	$ 35.72	$ 36.08	$ 36.44	**$ 811.55**
Discretionary FTA Grant Programs	$ 11.68	$ 0.79	$ -	$ 1.22	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ 1.22**
Match - Gasoline Tax/Farebox/State Fleet/GO Bond	$ 10.81	$ 8.20	$ 7.60	$ 8.67	$ 7.99	$ 8.07	$ 8.15	$ 8.24	$ 8.24	$ 8.24	$ 8.32	$ 8.41	$ 8.49	$ 8.57	$ 8.66	$ 8.75	$ 8.83	$ 8.92	$ 9.01	$ 9.10	$ 9.19	$ 9.29	$ 9.38	$ 9.47	$ 9.57	$ 9.66	$ 9.76	**$ 218.59**
Elderly/Disabled vehicle match RIde agencies	$ 0.16	$ 0.16	$ 0.16	$ 0.16	$ 0.16	$ 0.16	$ 0.16	$ 0.16	$ 0.16	$ 0.16	$ 0.16	$ 0.16	$ 0.16	$ 0.16	$ 0.16	$ 0.16	$ 0.16	$ 0.16	$ 0.16	$ 0.16	$ 0.16	$ 0.16	$ 0.16	$ 0.16	$ 0.16	$ 0.16	$ 0.16	**$ 4.00**
Total	**$ 52.31**	**$ 38.41**	**$ 37.35**	**$ 39.23**	**$ 37.42**	**$ 37.80**	**$ 38.16**	**$ 38.56**	**$ 38.86**	**$ 39.17**	**$ 39.56**	**$ 39.95**	**$ 40.35**	**$ 40.75**	**$ 41.16**	**$ 41.57**	**$ 41.98**	**$ 42.40**	**$ 42.82**	**$ 43.25**	**$ 43.68**	**$ 44.11**	**$ 44.55**	**$ 45.00**	**$ 45.45**	**$ 45.90**	**$ 46.36**	**$ 1,035.36**

Part IV Environmental Analysis

PART FOUR - ENVIRONMENTAL ANALYSIS

The transportation system provides tremendous benefits to the economy and to the quality of life enjoyed by Rhode Islanders. Unfortunately, past highway construction practices and the sheer volume of vehicles using the state's roadways also has various adverse impacts. This section begins with a discussion of the state's natural resources and broaches the concept of activities that can begin to mitigate any adverse impacts on a system-wide basis. This is followed by an analysis that looks at three scenarios of growth with respect to Rhode Island's recently adopted Land Use Plan and delineated urban services boundary and how that affects the transportation network. There is also an Environmental Justice section that examines the distribution of benefits and burdens of the transportation system on target populations (low-income and minority). The Air Quality Analysis section documents that the projects recommended by this Plan are consistent with the State Implementation Plan for Air Quality.

NATURAL RESOURCES AND ENVIRONMENTAL MITIGATION

The State of Rhode Island is endowed with a wealth of natural and historic resources. Several State Guide Elements, including Land Use 2025, exist to protect these resources. The State is also fortunate to have vast GIS data layers that policy makers can use to look at the environment on a system level. The National Environmental Policy Act (NEPA) has mandated analysis of environmental impacts on a project level, but SAFETEA-LU requires that this be studied on a system level as well.

Rhode Island Statewide Planning held an Environmental Mitigation Consultation in April of 2007 to gather interested parties and agencies to generate ideas for mitigation strategies. The agencies listed at the left participated in this session. Research on activities undertaken by other MPO's was presented as a platform from which to begin. *Transportation 2025*, Rhode Island's plan at the time, already contained many strategies and policies related to environmental stewardship. The chart below summarizes the discussion that was held during the Environmental Mitigation Consultation. Following the chart is a more detailed discussion of each topic area.

Environmental Mitigation Consultation

Federal Highway Administration
Environmental Protection Agency
RI Department of Transportation
RI Public Transit Authority
RI Department of Environmental Management
RI Coastal Resources Management Council
RI Historic Preservation and Heritage Commission
RI Statewide Planning Program
Narragansett Indian Tribe
Grow Smart RI
Sierra Club
Save the Bay

Environmental Mitigation Consultation					
Resource	**Impaired by**	**Impact**	**Existing Recommendations & Programs**	**New Mitigation Strategy**	**Receiving Areas**
Air	VMT increase Vehicle emissions / idling / congestion Construction dust/ off-road diesel activity Particulate matter from tires, brake pads, tailpipes Heat island effect	Public health (respiratory illness, including asthma) Vegetation Wildlife Climate change	En.2.a, En.3.c/g, D.3.b TIP Bicycle Pedestrian, CMAQ, and Transit Programs Open Space Acquisition	Open Space Acquisition (Plan) Diesel retrofits – State vehicles, rail, ferry, etc. Alternative modes Setbacks from state roads with vegetated buffer	Residences within 250' feet of state roads
Water / Wetlands	Sediment Storm runoff Particulate matter from tires, brake pads Leaking fuels, fluids, lubricants Snow removal (salt/sand) Erosion Wetland filling Impervious surface	Groundwater recharge Drinking water supplies Public health Marine and terrestrial wildlife Marine and terrestrial vegetation Flood storage Thermal impact on coldwater habitats	En.2.b, En.3.c/d, D.3.b TIP Open Space Acquisition Highway/Enhancement Programs: Stormdrain retrofit, landscaping	Pre-treat stormwater/infiltration Use of porous pavements/recharge Test stormwater for effectiveness of new technologies 2:1 wetland replacement (prefer on-site)	Drinking water supplies Vernal pools SCORP wetland priorities Commuter lots
Wildlife	Highways Traffic Invasive species	Coldwater fisheries (thermal impacts of highway runoff) Fragmentation of habitat Roadkills	D.2.d	Critter crossings Culvert design Deer reflectors Removal of non-native species Reduced mowing	Stream crossings (such as Rt. 4/Hunt River Crossing) that lack terrestrial crossings Vernal pools and surrounding lands – mapping underway – Statewide habitat restoration plan

Resource	Impaired by	Impact	Existing Recommendations & Programs	New Mitigation Strategy	Receiving Areas
Energy	Fuel consumption Electricity for transit/ highway operations	Climate change Economic Political stability Fiscal	En.3.j, En.2.a, En.3.e/f, D.2.f CMAQ	Incentives for efficient vehicles Encourage solar energy Encourage green design and construction practices Measure GHG emissions at project level	
Community	Noise Speed Traffic congestion Highways Solid waste (junk cars, tires, litter) Light pollution Snow removal, including sidewalks (salt/sand)	Economy Quality of life Fragmented open space and neighborhoods Landfill space	En.3.c, D.2.a/c/d/f, D.3.b Enhancement Program Transportation Community System Preservation Program (discretionary))	Use recycled materials as much as practicable ACI litter patrol crews Explore use of porous / quiet pavements Enforce sidewalk snow removal Use of “grassy strips” for snow storage/buffer	
Scenic and Historic Resources	Ceremonial stone landscapes Power lines Infrastructure Billboards Litter	Tribal resources / cultural / subsurface Visual quality Quality of life Fragmented forests/ open spaces	D.2.e, D.3.f, Lu.2.b Enhancement Program* Transportation Community System Preservation Program (discretionary)	Recognize stone landscapes in EIS/EA Support reduction in the number and billboards and other outdoor advertising	Graffiti removal

*Not an appropriate source for burial of overhead power lines.

AIR QUALITY

A well-known system wide impact of the transportation system is degraded air quality. Exhaust from cars and trucks contribute pollutants that are regulated by the Clean Air Act (most notable, volatile organic compounds, oxides of nitrogen, carbon monoxide and particulate matter). Through the air quality conformity process these emissions are well documented and modeled. Rules require that transportation plans and projects do not result in further degradation of air quality. The good news is that the vehicle fleet is becoming cleaner and air quality is expected to show marked improvements in the coming decades, despite increases in vehicles mile traveled (VMT). An executive summary of the air quality conformity demonstration for this plan appears later in this chapter. The Congestion Mitigation Air Quality Program (CMAQ) exists to improve air quality. Rhode Island will fund over $10 per year in CMAQ projects that include bike/pedestrian projects, South County Commuter Rail service, transit service, commuter resources, and many others. In addition, the issue of residential proximity to highways was raised by this group. This has been further explored in the Environmental Justice section, but this should be considered a target area for mitigation measures, and a criteria under which additional points can be awarded in future CMAQ project solicitations.

WATER QUALITY AND WETLANDS

See Map # 4-1 Water Supply and Wellhead Protection Areas and Map # 4-2 Wetlands

Water quality is a serious issue, although not as rigorously regulated by transportation planning regulations. Water quality suffers due to stormwater runoff from highways (as well as privately owned parking lots) that contains fuels, oils, lubricants, salt, sand, and particles from brake and tire wear. Sand, salt and soil erosion can also contribute large amounts of sediment and silt to runoff waters. Some of this runoff is filtered by natural means or treated in a wastewater facility, but some of it is collected in storm drains and runs untreated directly into water bodies. At a certain level this results in drinking water, public health, and ecological impacts. Design and construction of new projects do a much better job in treating and filtering stormwater. Rhode Island also has a program of retrofitting storm drains to reduce the pollutant load of water that is discharged. Mitigation sites should be considered around drinking water reservoirs and wellhead recharge areas. Porous pavements, although they can be maintenance issues during the winter, should be considered for certain overflow parking areas and in other low use situations by the state and municipalities.

Wetlands are now recognized for the many purposes they serve, including provision of habitat, flood storage, groundwater recharge, etc. There are few highway construction projects undertaken now that will have severe wetland impacts. However, when there are impacts, 2:1 wetland replacement should be the goal, preferably on-site. If that is not possible, off-site receiving areas should be considered. The State Comprehensive Outdoor Recreation Plan (SCORP) identifies wetland priorities. Additionally, RIDEM is undertaking an effort to map vernal pools in the state which could also be targeted for off-site mitigation. Vernal pools are seasonal bodies of standing water that typically form in the spring from melting snow and other runoff and dry out in the summer, providing habitat for semi-aquatic species.

Preventing runoff pollution from road, highway, and bridge construction and operation requires planning, education, inspection, and maintenance. Drainage designs that reduce overall runoff by maximizing infiltration should be encouraged. Erosion, sediment, and runoff control plans that incorporate the most appropriate and cost-effective "best management practices" are essential to effective pollution control. Highway personnel must be educated about the requirements of the erosion/sediment/runoff control plan. Inspection and enforcement authority are necessary to ensure awareness of and compliance with the adopted practices. Finally, best management practices require regular maintenance to ensure that they perform optimally. Once a system has been constructed or improved, responsibility for maintenance should be assumed by the state or the locality. The FY 2013-2016 TIP includes a combined total of $4 million for drainage improvements statewide under the stormwater retrofit item in the Traffic Safety Program. It's important to note that RIDOT has requested an additional $2 million annually (not included in the FY 2013 – 2016 TIP) through the Capital Budget process to address highway drainage issues and is an important component of the overall RIDOT program.

WILDLIFE

Wildlife considerations are a new topic in Rhode Island's long range transportation plan. The construction of the transportation system has fragmented forest habitat and provides few crossing areas for animals. Potential solutions include "critter crossings" that allow animals to safely go over or under a highway. One particular area that was noted for lack of terrestrial crossing is Route 4 where it crosses the Hunt River. Reduced mowing along roadsides (consistent with safety practices) can provide better cover for small animals. Habitat can also be degraded by introduction of invasive species. It has been noted that there is a possibility of thermal impacts to coldwater fisheries from highway runoff, but no locations were specifically noted.

See Map # 4-3 Rare Species Habitats and Map # 4-4 Protected Conservation and Park Lands

While the highway system can have adverse impacts on wildlife, the opposite is also true. Large animals also present a hazard to motorists. A motorist that strikes a large deer may or may not walk away. Swerving to avoid animals also results in crashes. While geographic data on roadkills is not readily available, particularly deer strikes, deer reflectors should be considered for rural highways in the state. Deer are attracted to lights, so these white reflectors, placed off the shoulder, divert deer away from headlights of moving vehicles. Vernal pool restoration (see wetland section above) as part of a larger statewide habitat restoration plan should be considered as appropriate.

ENERGY

It is becoming increasingly important during times of global political instability, climate change, and record high fuel prices to reinvigorate our efforts to drastically reduce our fossil fuel consumption and develop more reliable and renewable sources. This will provide tremendous benefits through economic independence and air quality. This concept is important not only for vehicle energy use, but also in transportation operations and facilities (green building design, solar powered detection equipment and signage, LED traffic lights). Most would agree that the level of fossil fuel use on this planet has resulted in carbon induced climate change. This in turn may be causing sea level rise that could threaten communities and transportation infrastructure in the future. Sea

level rise mapping has been undertaken in this Plan (Page 4-8). This Plan contains many strategies that encourage sustainable and responsible use of energy resources.

COMMUNITY IMPACTS

There are a multitude of community impacts from the transportation system, although these may be offset to a great extent by mobility and quality of life benefits provided. Noise, speed, traffic congestion, solid waste (junk cars, tires, litter), light pollution, and snow removal residue (salt/sand) can all be considered as adverse community impacts. To a certain extent these are unavoidable, but certain design techniques (cut-off light fixtures, quieter pavements) can mitigate these impacts without compromising safety. Operational activities (enforcement, traffic management, and street sweeping) should be enhanced. Lastly, the use of grassy strips between the street and sidewalk can provide for a much more enjoyable pedestrian experience as well as provide space for snow storage, groundwater recharge, vegetation, and beautification. Recycling transportation related waste (such as fuel oil) and use of recycled materials in construction (asphalt) is also strongly encouraged.

SCENIC AND HISTORIC RESOURCES

In addition to established historic sites and districts, lesser known historic resources include ceremonial stone landscapes which were used by Native American tribes for celebrations and rituals. As they are not identified in the NEPA process, the State should make every effort to identify and protect these sites from development. Many of the views of Rhode Island's forests, farms, and waterfronts are marred to some degree by outdoor advertising, utility structures, and litter. Outdoor advertising in particular should be limited as much as possible. Inmate crews should be used to the extent practicable for litter and graffiti removal. New or upgraded utility infrastructure should be placed as sensitively as possible. While there may be a visual impact, these facilities serve a public need.

See Map # 4-5 Designated Scenic Areas and Map # 4-6 Historic Sites and Districts

Since the Environmental Mitigation Consultation has occurred, staff has investigated two topics, dam safety and sea level rise, in which the environment has the potential to threaten transportation infrastructure. In both cases, more detailed investigation is required to really utilize this information.

DAM SAFETY

The RIDEM maintains a database of the State's 672 dams and has classified them by the severity of the consequences of dam failure. The three classifications include:

- Low - No probable loss of human life (468 dams)
- High - Probable loss of human loss (92 dams)
- Significant - No probable loss of human life, but can cause major economic loss, disruption of lifeline facilities, or may impact public health or safety (112 dams)

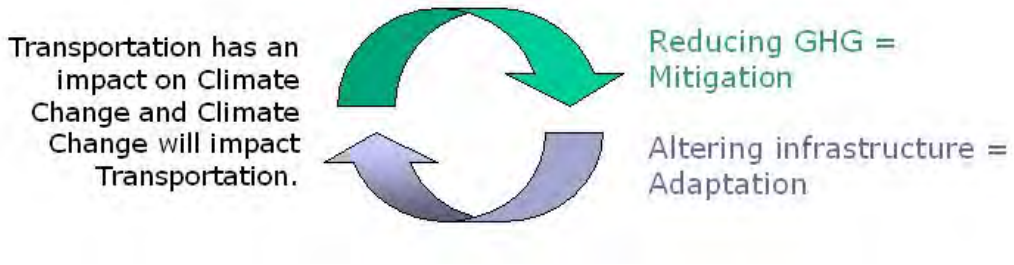
See Map # 4-7 Roadways Vulnerable to Dam Failure

A map was prepared that shows 204 dams rated High or Significant that are within 1,000 feet of a roadway. In this particular exercise, the condition of the dam was not taken into account. The topic of dam safety should receive more attention in the future. Further analysis should screen the condition of the dam, as well as the importance of the roadway. In these instances, diversionary routes should be identified in the same manner they are for Interstate highways. A field should be added to RIDEM's database that identifies whether the dam is in fact integral to the roadway itself. The Gainer Dam is the most prominent example, but it is unknown how many others there are. Security, maintenance and inspection activities should be of paramount importance.

SEA-LEVEL RISE

The generally accepted theory of climate change and sea-level rise is no longer a situation that is considered to be preventable. It is happening, and as we work toward reducing our carbon emissions (mitigation measures), we must also plan for impacts to our infrastructure from sea-level rise. How much and when are still open for debate, but the RI Coastal Resources Management Council is currently using 3-5 feet as the likely rise in the next 100 years (1-2 meters). Rhode Island has over 400 miles of coastline and the low-lying areas are vulnerable to various levels of inundation. Steeply sloped shorelines will fare better as the horizontal impact will be minimal. Flat areas like beaches, however, are most vulnerable and flooding will affect a broader land area. At the time this plan was written, digital elevation data was available for areas in flood zones and below a 3 meter elevation. These areas were mapped for informational purposes; although it is not anticipated that a 3 meter rise would occur in the 2030 planning horizon. It is, however, entirely appropriate to consider a 100-year planning horizon as new bridges that are being built today have a life expectancy of 50-100 years.

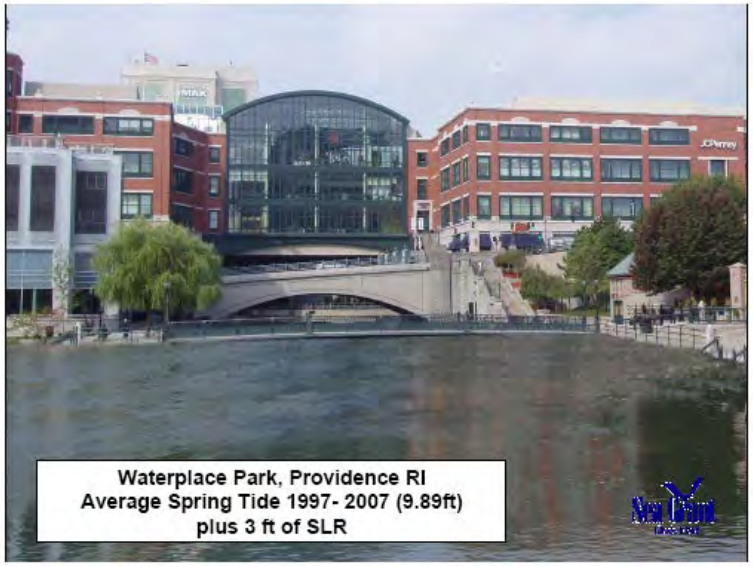
See Map # 4-8 Sea Level Rise


Transportation has an impact on Climate Change and Climate Change will impact Transportation.
Reducing GHG = Mitigation
Altering infrastructure = Adaptation

The mapped impacted areas included parts of all the Rhode Island coastal communities including such areas as Winnapaug Pond and Atlantic Avenue, Jerusalem and Galilee, Quonset State Airport, Conimicut, Port of Providence, and downtown Newport. Individual state highway segments lying within inundated areas should be identified and categorized as to their future status (these are considered to be "adaptation" strategies):

- Realign roadway on higher ground
- Elevate roadway -- bridge structure
- Elevate roadway – dike structure
- Accept loss of roadway and identify alternate route

It is also important to note that bridges may not be flooded, but the clearance under the bridges will be reduced making the deck more susceptible to storm surges and wave action. Visualizations of sea-level rise were performed by the University of Rhode Island for locations in Providence, Pawtucket, and Newport. Images of Waterplace Park in Providence appear below. More information can be found at http://seagrant.gso.uri.edu/coast/slr_tools.html .



It is expected that 1-meter data will be available in the near future. Statewide Planning will continue to collect the best available data and further develop mapping and identification of impacted facilities into a Technical Paper to be made available to the cities and towns to assist them in undertaking this same process for local roads.

LAND USE SCENARIO ANALYSIS

Land Use 2025, Rhode Island's statewide land use plan, established a boundary called the Urban Services Area. Inside the urban area, public water and wastewater infrastructure exists to support more dense population growth. Outside this area, this infrastructure does not exist, and it is considered to be in the State's best interest to maintain this area in more of a rural state for scenic, environmental, fiscal, and quality of life reasons. The urban area generally includes everything around Narragansett Bay and the Blackstone Valley, and small areas in Burrillville, Jamestown, and Westerly. Village scale Growth Centers are also permitted in certain rural areas.

A scenario planning exercise was completed by Rhode Island Statewide Planning Program that looks at varying degrees of density inside the urban area and then begins to investigate the transportation impacts that may have. The Travel Demand Model was used to analyze population and employment growth by assigning different percentages of population and employment growth to Traffic Analysis Zones (TAZ's) inside and outside the urban area. The total numbers remain the same – only the distribution changes.

Population and Employment Growth		
Year	Population	Employment
2000	1,048,319	467,299
2030	1,140,543	516,048
Change	92,224	48,749

The three scenarios are as follows for Current Trend, Sprawl Scenario, and Compact Scenario:

CURRENT TREND

This reflects the current population and employment projections as assigned to the TAZ's for use in forecasting VMT and emissions. This is considered to be the best available data. The current trend shows 55 percent of the growth going to TAZ's inside the urban area and 45 percent outside (55 / 45 split).

SPRAWL SCENARIO

In this scenario, the rural area absorbs more of the population and employment growth (20 percentage points more of the 2000-2030 growth than in the Current Trend for a 35 / 65 split).

COMPACT SCENARIO

In this scenario, the urban area absorbs more of the population and employment growth (30 percentage points more of the 2000-2030 growth than in the Current Trend for an 85 / 15 split).

These scenarios were run in 2008 with a partially completed transit component of the travel model and based on current RIPTA ridership on individual routes. The results are as follows:

Growth Scenarios	Population 2030		Employment 2030		Daily Vehicle Miles Traveled (DVMT) 2030			Transit Ridership 2030		
	Urban	Rural	Urban	Rural	Urban	Rural	Total	Urban	Rural	Total
Current Trend 55/45	855,947	284,596	438,084	77,964	16,390,489	10,355,817	26,746,306	108,475	835	109,310
Sprawl Scenario 35/65	836,433	304,110	417,482	98,566	15,810,783	11,345,517	27,156,300	104,789	998	105,787
change from current trend	-19,514	19,514	-20,602	20,602	-579,706	989,700	409,994	-3,686	163	-3,523
percent	-2.3%	6.9%	-4.7%	26.4%	-3.5%	9.6%	1.5%	-3.4%	19.5%	-3.2%
Compact Scenario 85/15	882,545	257,998	441,857	74,191	16,502,947	9,970,877	26,473,824	110,765	778	111,543
change from current trend	26,598	-26,598	3,773	-3,773	112,458	-384,940	-272,482	2,290	-57	2,233
percent	3.1%	-9.3%	0.9%	-4.8%	0.7%	-3.7%	-1.0%	2.1%	-6.8%	2.0%

This analysis confirms what is widely believed in the planning profession: compact development is more sustainable. For example, In the Sprawl Scenario, a rural population increase of 6.9 percent leads to a larger rural VMT increase of 9.6 percent. Conversely, an urban population increase of 3.1 percent in the Compact Scenario produces only a 0.7 percent increase in Urban VMT.

The model also shows that total DVMT is actually reduced in the Compact Scenario (compared to the Current Trend) and increased in the Sprawl Scenario. Conversely, transit ridership decreases in the Sprawl Scenario and increases in the Compact Scenario. The reader should bear in mind that this is a daily model, and the changes on an annual basis are significant and meaningful in terms of congestion reduction and air quality benefits.

This cursory look at growth scenarios is deserving of further study when the transit component of the model is complete (including commuter rail) and is fully calibrated. At that time, further investigation into mode split, projected ridership, and travel time may reveal corridors where increased transit service is needed.

ENVIRONMENTAL JUSTICE ANALYSIS

The State of Rhode Island is committed to integrating the principles of environmental justice into all of our transportation planning programs and activities. This commitment to equity was first included in the Long Range Transportation Plan in *Transportation 2020* (completed in 2001). A full assessment of our planning process, including environmental justice actions undertaken, was conducted in 2005 and 2010 as part of a federal certification review. In 2008 Statewide Planning conducted a benefits and burden case study of the environmental justice population based on 2000 U.S. Census data and select elements of the 2008 transportation system. Quantification of burdens was conducted on a macro level using an equation termed the "Location Quotient." The target population's environmental justice proximity to an interstate and bus routes was used as a variable in the 2008 case study, along with access and air quality assumptions to calculate the measure of burden. It was determined that a higher proportion of minorities and populations below the poverty level live within the case study area and that there is a disproportionate burden, for example, poor air quality, with regards to the transportation systems studied. As part of this update, the location quotient analysis was employed using 2010 Census figures. This analysis found that a higher proportion of minorities and populations below the poverty level continue to live within the case study area and there continues to be a disproportionate burden with regards to the transportation systems studied.

The transit program recommended in this Plan is expected to benefit minority and low-income households by increasing transit service available to them and by increasing their access to jobs and other opportunities. As part of the 2008 Plan update, a benefits analysis was conducted to determine if target environmental justice populations have equitable transit access. Another demographic group that is considered in this analysis is "transit dependent" as defined by zero-car households. The same location quotient equation used in the burdens analysis was used for this analysis for combined minority and low income populations. It was found that Rhode Island's environmental justice populations, along with transit dependent populations have greater access to transit than the state population as a whole. As part of this update, the same analysis was conducted using 2010 Census figures. The findings of this exercise concluded that environmental justice populations along with transit dependent populations continue to have greater access to transit than the state population as a whole.

As part of the FY 2013-2016 Transportation Improvement Program update, a quantitative analysis of the projects that are programmed for minority and low income areas was conducted. In summary, this analysis found that in nearly all cases, the percentage of transportation improvement projects in the categories of Highway, Pavement Management, Bicycle/Pedestrian, Enhancement, Traffic Safety Programs, and Major Projects with Multi Year Funding, in the minority and low-income census tracts far exceeds the percentage of the target population as it compares to the total state population. Overall, the implementation of these types of projects in the TIP is extremely equitable and beneficial to Rhode Island's disadvantaged citizens as the rehabilitation of existing transportation infrastructure provides an overwhelming positive impact on a neighborhood in that it improves safety, increases mobility and may provide construction workforce opportunities for local residents; therefore benefits rather than burdens a community. The full results of this study are presented in the TIP (www.planning.state.ri.us/tip/TIP%20Full%207-12-12%20Final.pdf).

In examining the equitable distribution of transit services and projects, it has been determined that two-thirds of RIPTA's system serves minority neighborhoods. The route system has Providence as its hub, with additional intra-city service in Pawtucket, Woonsocket, and Newport. This corresponds well with areas where minority concentrations are the greatest. The paratransit service is now a statewide system. Additional information on RIPTA's commitment to Civil Rights, Title VI can be found at www.ripta.com/civil-rights--title-vi .

IDENTIFYING ENVIRONMENTAL JUSTICE POPULATIONS

The target populations for environmental justice are minorities, low-income individuals, and persons with disabilities. Minority is defined as including four ethnic groups: Hispanic, Black, Asian, and Native Indian, consistent with the Federal Environmental Justice Order. With the exception of persons with disabilities, these populations have been identified and mapped using data from the 2010 Census. For this update, the Census definition of minority was utilized which is the total population minus all white, non-Hispanic persons. The data for persons with disabilities has not yet been released. The updated environmental justice population mapping can be found at the end of this document.

See E.J. Maps #4-9 Through 4-16

In compliance with Executive Order No. 13166, Improving Access to Services for Persons with Limited English Proficiency (LEP), the purpose of which is to ensure accessibility to programs and services to eligible persons who are not proficient in the English language, Statewide Planning compiled data and mapping of LEP populations as part of a RIDOT Environmental Impact Statement (EIS) for the South County Commuter Rail Study. In addition, Statewide Planning is in the process of completing an LEP Plan for its own planning program services. These efforts were conducted using guidance that was issued by the U.S. Department of Transportation (DOT) to ensure that persons in the United States are not excluded from participation in DOT-assisted programs and activities simply because they face challenges communicating in English.

The mapping for these efforts is provided within this plan, a test case study, along with the other environmental justice mapping.

PRINCIPLES OF ENVIRONMENTAL JUSTICE

The State embraces the following three core principles to guide our efforts in environmental justice:

- **Outreach** - Reach out to involve target populations in the planning process.
- **Burdens** - Prevent disproportionately high adverse impacts.
- **Benefits** - Ensure an equitable distribution of benefits.

The discussion that follows is organized by these principles.

OUTREACH

Outreach activities are intended to provide input and guidance to the planning process to achieve environmental justice goals in both the Long Range Transportation Plan and the Transportation Improvement Program. The following outreach activities have occurred from 2007 to the current day in 2012:

- Transportation Advisory Committee (TAC) Membership: The Governor's Commission on Disabilities and the Narragansett Indian Tribe are represented on the TAC.
- Environmental Justice List: An e-mail list consisting of 49 social advocacy groups (housing, elderly, Hispanic, etc.) for target populations was developed and is used in notifying the community of major planning activities.
- Bus Users Forum: The Accessible Transportation Advisory Committee (ATAC) provides an opportunity for transit dependent residents to discuss bus service issues directly with transit operators and planners.
- Flyers: Public participation brochures have been developed in Spanish and have been distributed and posted our website.
- Open House: A major event was held in March 2007 at the Blackstone Valley Visitor Center (also a bus terminal) and advertised in Spanish and English.
- Inner City Students: Several lectures and planning exercises were held in 2007 – 2008 in conjunction with the University of Rhode Island at Feinstein High School in Providence.
- Coordinated Public Transportation - Human Services Plan: RIPTA brought together many agencies (Elderly Affairs, Human Services, Labor and Training, Commission on Disabilities) that were key to the development of this Plan. Statewide Planning assisted in this effort with extensive census mapping of target populations, mailings to our Social Advocacy Group list, and e-mail notifications to our EJ list.

Meeting the needs of the "underserved communities" is found in the goal of the Planning section of this Plan's recommendations. The polices related to this goal run the spectrum of a program that is accessible, constructively engages, is inclusive, institutes outreach, and emphasizes all members of the environmental justice community.

BURDENS

Transportation systems exist to provide mobility and quality of life benefits. Unfortunately, the construction and operation of these systems can have adverse impacts such as excessive noise, degraded air quality, degraded water quality, and isolation or fracturing of neighborhoods. Equity and environmental justice goals seek to ensure that target populations do not bear a disproportionate share of these "burdens." Quantifying burdens on a macro level can be accomplished with the following equation termed "Location Quotient:"

$$\frac{\text{EJ population in the study area / total population in the study area (U.S. Census, 2000 or 2010)}}{\text{EJ population in the reference area / total population in the reference area}}$$ [1]

A number greater than 1 indicates that there is a greater proportion of the EJ population in the study area. For the purposes of this plan and in consideration of the analytical tools available to staff, exposure to vehicle emissions was undertaken as a case study to determine if there is a disproportionate adverse impact on environmental justice populations.

Poor air quality can aggravate respiratory conditions such as asthma. On-road mobile sources of emissions (car, truck, and bus) contribute to degraded air quality, although point sources (power plants and factories) and area sources (lawn mowers and leaf blowers) contribute as well. Rhode Island has a rate of asthma that is 8th highest in the nation, and 1 in 10 households in Rhode Island has someone with this disease.[2] A University of Southern California (USC) study (part of the large California Children's Health Study) has found a link between asthma rates and how close the subjects live to a freeway. Specifically, the number of children who suffered asthma attacks increased as the distance between their homes and a major thoroughfare decreased. Those living within 82 yards of a freeway had the highest rates of asthma, while those living 83 to 166 yards away had the second-highest rates. A family's socioeconomic status, exposure to secondhand smoke and the type of housing did not explain the differences in asthma rates.[3]

CASE STUDY: What percentage of RI's EJ populations live within 250 feet of Interstate highways compared to the population as a whole?

The current 2012 bus fleet includes 235 buses, trolleys, and vans including 52 hybrid buses. All vehicles use ultra-low sulfur diesel to reduce emissions. The primary bus routes traverse many low-income, minority, and transit dependent neighborhoods as well as the state's freeways. Diesel emissions in particular can pose a health hazard in these urban neighborhoods where asthma rates are often higher than in suburban neighborhoods.

In an effort to determine the exposure of Rhode Island's environmental justice populations to excessive emissions, census tracts with greater than average concentrations target populations were mapped with a 250' buffer around Interstate highways and freeways. The 250' buffer (approximately 82 yards as noted in the USC study) becomes the study area. Vehicles on other roadways also contribute to poor air quality, but a principal arterial has mobility benefits that balance out the burdens (access to commercial areas, services, residential neighborhoods, sidewalks, bus routes, etc.) Interstate highways, however, provide mobility benefits only without providing access to property or allowing for non-motorized modes or transit stops. Therefore, close proximity to an Interstate is assumed in this case to be more of a burden than a benefit. The reference area is the entire State.

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1 Methodological Challenges of Environmental Justice Assessments for Transportation Projects, TRB, TRC #2013, 2007.

2 Behavioral Risk Factor Surveillance System, 2002.

3 http://www.cleanairchoice.org/outdoor/AsthmaFreeway.asp

This mapping exercise presented the following Location Quotient equation for combined minority populations according to 2000 U.S. Census data:

$$\frac{8{,}073 / 30{,}218}{167{,}081 / 1{,}048{,}319}$$

The calculated ratio is 1.68 which indicates that in fact a higher proportion of minorities live within this study area and that there is a disproportionate burden.

See Map # 4-15

Case Study: EJ Populations within 250' of Interstates and Freeways

This mapping exercise presented the following Location Quotient equation for combined minority populations according to 2010 U.S. Census data:

$$\frac{7{,}691 / 20{,}367}{248{,}882 / 1{,}052{,}567}$$

The calculated ratio is 1.60 which indicates that a higher proportion of minorities continue to live within this study area and that there is a disproportionate burden; however the ratio is just slightly smaller than that found in 2000 indicating a slight reduction in the transportation burden on minorities.

Similarly with population below the poverty level in 2000, the equation is:

$$\frac{5{,}938 / 30{,}218}{120{,}548 / 1{,}048{,}319}$$

The calculated ratio is 1.71 which, again, indicates a disproportionate burden.

Using the 2010 population below the poverty level, the equation is:

$$\frac{3{,}538 / 20{,}367}{123{,}396 / 1{,}052{,}567}$$

The calculated ratio is 1.48 which, again, indicates a disproportionate burden, however the burden has improved over the past 10 years.

This Plan presents the following recommendations to begin to address this concern. These recommendations are also found in Part Five with numbers noted in parentheses.

1. Amend CMAQ criteria to award more points to projects improving air quality in areas close to freeways. (EQ.3.d)
2. Through program implementation of diesel retrofits for school buses, begin with school districts in affected areas. (EN.3.e)
3. Increase use of vegetated buffers along the highway to trap particulates and improve air quality. (En.3.c)

Additionally, in order to better understand this situation, further study is encouraged to attempt to obtain historic data from 1970, 1980, and 1990. Identification of a trend would determine whether the problem is getting better or worse. From the limited data that was analyzed (2000 and 2010), it does appear that the disproportionate burden is shrinking. Also, Statewide Planning has generated a map that identifies locations suitable for high-density housing. In future refinements of this map, the State should consider a new site screening criteria related to health impacts due to emissions exposure for all populations, not just target populations.

Rhode Island's transportation plans, policies, and programs advance the goal of reducing diesel emissions by encouraging diesel retrofitting programs and the use of alternative fuels. All new RIPTA fixed route buses will be equipped with diesel particulate filters and engines with lower emissions levels. This plan also encourages non-motorized modes of transportation (bicycle and pedestrian) which help to achieve many goals related to improved air quality, physical fitness, reduced congestion, and are free or low-cost modes. It should be noted that overall air quality is improving and the passenger vehicle fleet is becoming cleaner. Additionally, the standards for transit bus engines have been getting more stringent on the amount of emissions that are acceptable, which results in improved air quality in areas with a lot of transit activity. Over time, living in proximity to a highway should have increasingly fewer health impacts.

It is beyond the scope of this Plan to investigate other potentially disproportionate adverse impacts to environmental justice populations, such as freeway noise and degraded water quality.

BENEFITS

Transportation provides a means to access shopping, gainful employment, health care and other services, and social and recreational activities. Without adequate means of transportation, quality of life can suffer. Transportation system investments should be equitably distributed, and access to transportation services should also be equitable such that disadvantaged populations can reasonably accomplish the activities of daily life. Public transportation service is not a convenience, but rather a necessity for transit dependent residents.

CASE STUDY: What percentage of RI's target populations live in area served by transit compared to the population as a whole?

ACCESS TO TRANSIT

The transit program recommended in this Plan is expected to benefit minority and low-income households by increasing transit service available to them and by increasing their access to jobs and other opportunities. As part of this Plan update, an analysis was conducted to determine if target populations have equitable transit access. Firstly, a polygon coverage was created for geographic analysis by defining a half-mile radius buffer around transit stops. This transit service area coverage was then overlaid on target populations to determine the number of people in the access area. The same Location Quotient equation as used in the previous section was used for this analysis for combined minority and low income populations. Using the 2000 Census, the calculation is the following:

$$\frac{259{,}574 \,/\, 771{,}704}{310{,}434 \,/\, 1{,}048{,}379}$$

The calculated ratio is 1.14 which indicates greater access to transit for environmental justice populations.

Using the 2010 Census, the calculation is the following:

$$\frac{283,839 / 533,487}{372,278 / 1,052,567}$$

The calculated ratio is 1.50 which indicates that access to transit for environmental justice populations continues to improve.

Another demographic group that is considered in this analysis is "transit dependent" as defined by zero-car households, of which there were 38,422 in the transit service area in 2000:

$$\frac{38,422 / 771,704}{44,518 / 1,048,379}$$

The calculated ratio is 1.19 which indicates greater access to transit for zero-car households.

According to the 2010 Census, there were 37,563 zero-car households in the transit service area:

$$\frac{37,563 / 533,487}{38,137 / 1,052,567}$$

The calculated ratio is 1.94 which indicates that access to transit for zero-car households continues to improve.

Access to jobs is one of the most critical issues for low-income and transit dependent households in the State of Rhode Island. RIPTA administers several programs to meet this need including Jobs Access Reverse Commute and New Freedoms Initiatives. However, the growth of employment in suburban areas and the lack of adequate transit service to these areas often create barriers for transit-dependent residents searching for job opportunities. Additionally, developments that locate low cost and senior housing in areas with low land costs may serve the state's affordable housing goals but put a great strain on RIPTA's ability to serve these locations.

See Map # 4-16 Case Study: EJ Populations within ¼ Mile of a Transit Stop

Transportation to jobs was raised as a key issue in the Coordinated Plan for Public Transportation and Human Services. This Plan continues to support bus service as part of its environmental justice program. RIPTA should also continue its efforts to give transit users a voice through a forum such as the New Public Transit Alliance (NUPTA) and continue its efforts to improve bus scheduling. Further development of the transit component of the travel demand model will enable analysis of other indicators such as travel time to work.

HOW THIS PLAN ADVANCES ENVIRONMENTAL JUSTICE GOALS

There are a number of transportation issues that this Plan identifies as important to minority, low-income, or transit dependent populations. There is an entire section of the plan recommendations that addresses Equity (described below). In addition, our commitment to environmental justice is pervasive throughout the recommendations section, and applicable references are also noted below.

EQUITY

The goal of equity is to "ensure that the transportation system equitably serves all Rhode Islanders regardless of race, ethnic origin, income, age, mobility impairment, or geographic location." The objectives refer to equitable distribution of projects and access to services. The policies and strategies reinforce the need for outreach and avoidance of disproportionate adverse impacts. They also set forth the need for provision of travel training for non-English speaking populations.

BICYCLE & PEDESTRIAN

Pedestrian and bicycle safety is an important issue that affects minority, low-income households, and especially transit dependent households living in our more urbanized communities. According to the 2010 American Community Survey 10.2 percent of households in Rhode Island does not own a vehicle, and for many of them, walking, and riding a bike is an important means of travel. However, pedestrians and cyclists face many safety hazards in urban areas where traffic volumes are high. This Plan promotes pedestrian and bicycle safety in urban areas of the state.

DESIGN

Design policies stress the importance of pedestrian access to transit and the need for ADA improvements.

ECONOMIC DEVELOPMENT

Economic development objectives and policies deal directly with getting people to and from work sites.

EMERGENCY RESPONSE

Emergency response cites the special evacuation needs of those with mobility impairments, the elderly and transit dependent populations.

ENVIRONMENT

Environmental objectives identify the need to reduce air and noise pollution, which may impact target populations disproportionately.

FINANCE

Over a quarter of the policy recommendations within the Finance section are devoted to the enhancement of the economic well-being of the transit system service within the state. In addition, ADA improvements are singled out for special consideration for financial restructuring to provide long-term fiscal stability.

HIGHWAY AND INTERSTATE

None of the proposed freeway improvements are expected to adversely affect any minority or low-income neighborhoods. The design for the improvements to Route 6 evolved such that there were minimal adverse impacts to minority or low-income neighborhoods. The operational and safety improvements all occurred largely within existing rights of way and did not affect residential neighborhoods. RIDOT outreach during the design process was done in English and Spanish. The interstate system was examined along its entire length with respect to the proximity of environmental justice populations, as close proximity is being considered as a burden due to degraded air quality. And lastly, the FY 2013 – 2016 Transportation Improvement Program (TIP) includes an analysis that demonstrates that bicycle, highway, and enhancement projects are equitably distributed.

INTERMODAL

Intermodal planning emphasis is placed on transit and connections to and between modes. The creation of additional "mini transit hubs," maintenance of Kennedy Plaza, provision of additional traveler information, travel training for the disabled, and expansion of private participation is all beneficial to the environmental justice populations.

LAND USE AND CORRIDORS

Land Use 2025, Rhode Island's State Land Use Plan, calls for directing growth and investments within an "urban services boundary" and creating development that is more conducive to successful use. The majority of low income, minority, and transit dependent populations are found within this urban area and improved transit service will benefit all.

PLANNING

Planning aspects recognize the "needs of underserved communities" and "supports inclusive transportation planning and resource allocation processes that are accessible to, understood by, and constructively engage all population groups."

SAFETY

The safety goals of the plan involve education, as well as engineering and enforcement. This is particularly important when addressing the needs of the environmental justice populations. The use of safety devices such as seatbelts and the routine state safety inspection of vehicles are lower within these demographics.

TRANSIT

Other transit recommendations in the Plan are specifically intended to improve mobility for low-income households. The Jobs Access Program is designed to help low income workers gain access to job site otherwise unavailable to them. The recommendation to extend hours of service for the bus system is intended to benefit the transit dependent person who often cannot access certain activities because bus service stops at 8:00 p.m. on many routes. Alternative transportation options need to be developed to address the challenges of providing access to job centers that are not located in areas with a lot of transit activity and of providing access to jobs that begin at staggered times. Fixed route public transit is not a viable service for low ridership travel like access to jobs that are located in remote areas and serve individual workers.

These many goals, policies, and strategies are critical components of Rhode Island's environmental justice program that the State will strive to pursue and improve. The State of Rhode Island remains committed to involving minority groups and low-income groups in our planning process, and to developing plans and programs that provide an equitable distribution of benefits and burdens.

AIR QUALITY ANALYSIS

EXECUTIVE SUMMARY

As part of its transportation planning process, the State of Rhode Island conducted an air quality analysis for both the FY 2013-2016 Transportation Improvement Program (TIP) and *Transportation 2035,* the Long Range Transportation Plan 2012 Update. The air quality analysis included a statewide analysis for ozone precursor emissions of volatile organic compounds (VOCs) and oxides of nitrogen (NO_x).

In response to the Federal Highway Administration (FHWA) and Environmental Protection Agency (EPA) guidance, Rhode Island has developed a Long Range Transportation Plan 2035 Update that includes projects to reduce vehicle miles of travel and improve traffic flow. The air quality analysis evaluated the on-road air quality emissions for *Transportation 2035*.

The general modeling process involved two major inputs, traffic and emission factor data. The traffic data were obtained from the Rhode Island Statewide Model (RISM). The RISM was updated to include additional roadways, modeling zones, and current planning assumptions. Consistent with federal guidance, the model's traffic data were adjusted to account for the following factors, Highway Performance Monitoring System, seasonal adjustment for pollutants, and peak and off-peak period speed characteristics.

The vehicle emission factors were derived using the EPA's latest mobile source emission factor model, MOBILE 6.2, and reflect Rhode Island-specific conditions, such as the vehicle registration distribution and the statewide Inspection and Maintenance (I/M) Program. The traffic and emission factor data were calculated on a link-by-link basis in the EPA's Air Information Retrieval System (AIRS) format, which is consistent with air quality analyses for previous Long Range Transportation Plans and Transportation Improvement Programs (TIPs).

The air quality analysis performed for *Transportation 2035* demonstrates compliance to the Rhode Island State Implementation Plan, the Clean Air Act Amendments, and the Transportation Conformity requirements. The air quality analysis demonstrates that the mobile source emissions of ozone precursor (volatile organic compounds (VOCs) and oxides of nitrogen (NO_x)) for 2012 Existing, 2015 Build, 2025 Build, and 2035 Build conditions fall below the statewide 2009 SIP mobile source emission budgets of 22.75 tons per day (tpd) of volatile organic compounds and 25.29 tpd of oxides of nitrogen for all future years. The results of the air quality analysis are presented in the table below.

Rhode Island Statewide Ozone Results for the Long Range Transportation Plan

	Daily Vehicle Miles Traveled (VMT)	VOC (tons/day)	NO_x (tons/day)
2009 SIP Budget	---	22.75	25.29
2012 Build	27,168,666	10.91	14.58
2015 Build	27,659,094	10.96	11.48
2025 Build	29,296,868	8.00	5.89
2035 Build	30,749,608	8.28	5.71

The complete Air Quality Analysis is on file at the RI Statewide Planning Program office.

Part V Recommendations

PART FIVE RECOMMENDATIONS

FRAMEWORK FOR RECOMMENDATIONS

This plan presents recommendations around 14 topic areas (listed at left). Within each topic, there is an overall goal, followed by objectives, policies, strategies and performance measures. Collectively, these are referred to as "recommendations." This is written according to guidance issued by RISPP on "How to Prepare and Maintain a State Guide Plan Element" (September 2003) using the following definitions:

RECOMMENDATIONS
Bicycle
Design
Economic Development
Emergency Response
Environment
Equity
Finance
Highway
Intermodal
Land Use and Corridors
Pedestrian
Planning
Safety
Transit

GOAL

The Goals is the end or ideal that is desired. It is a state or value toward which an effort is directed even though it may not necessarily be attainable. Goal statements are broad in scope, long-term in nature but should not be vague.

OBJECTIVE

Like a goal, an objective is an end toward which an effort is directed. An objective, however, should be *measurable* and *attainable*. Objectives are stated in more narrow and specific terms than goals and may be set within definite time periods and establish performance measures.

POLICY

Policies are intended to guide decisions and courses of action toward implementing a plan. Policies are not an endpoint but set forth the acceptable and recommended procedures for attaining goals and objectives.

STRATEGY

A Strategy is a specific action suggested as a recommendation that will further the advancement toward a goal or objective.

PERFORMANCE MEASURE

Performance Measure is a plan's objectives should be measurable and measured. Plans should specify parties responsible for implementing objectives, ideally within targeted timeframes.

Following is an introduction to the topics under which recommendations are organized.

BICYCLE

See Map # 5-1 Future Transportation System

A growing network of bicycle (and walking) paths is hugely popular among residents and tourists. Continued expansion of the state's greenway network is a strategic investment in the state's future that will provide transportation options and enhance the attractiveness of the state. Bicycling is an inexpensive and environmentally sound means of travel, practical for many short trips to work, school, and shopping. Added emphasis on signing and striping on-road bike routes will also support the diversification of travel options. Bicycle travel can be made safer and more appealing when these modes of transportation are consistently mainstreamed into project and community planning and design.

DESIGN

The design details and aesthetics of a transportation system's facilities are increasingly recognized as important determinants of the system's impact upon the communities it serves. Whether a transportation facility reflects the uniqueness of the place and character of the community it serves, or whether it represents a "cookie-cutter sameness" is determined by the quality of design and its attention to details. Design details that preserve (or echo) local historic features and cultural assets, use landscaping creatively, and reflect a human scale can enhance the attractiveness of transportation infrastructure and help enlist community and public support for needed facilities.

ECONOMIC DEVELOPMENT

The state transportation program should be focused on preserving assets and doing a good job of managing them consistent with the vision of this plan

Economic development is stimulated by transportation improvements and linkages. The concept of intermodal transportation is evident in prime industrial areas like Quonset/Davisville, the planned Warwick/Airport business center (Warwick Station Redevelopment District), and older cities. Such areas can be made more attractive to investment and development by intermodalism -- creating effective transportation linkages. The economy depends upon the successful movement of raw materials to manufacturers, finished goods to retail markets (or directly to the consumer), workers to the workplace, and consumers to shopping areas. Vibrant downtown shopping areas and Main Streets create a sense of community that appeals to residents and visitors alike. Tourism is a leading industry. It can be encouraged by providing better information in central locations, shuttle routes, appealing waterborne trips, port facilities for cruise ships, and other innovative transportation.

EMERGENCY RESPONSE

See Map # 5-3 Emergency Response Network

The terrorist attacks against the United States of America that occurred on September 11, 2001 and Hurricane Katrina in 2005 had a vast and profound impact on the transportation and infrastructure networks across the country as well as members of the public who are the customers of these systems. Our economy and our free lifestyle are dependent upon open, convenient, and low cost transportation. Our means of transportation, with the exception of airline travel, remain largely porous and in many cases vulnerable to terrorist attacks, whether by explosives or by release of chemical or biological agents. Although the risk of a terrorist incident is probably lower in Rhode Island than other metropolitan areas, the possibility cannot be ruled out, and the state and local governments must be prepared to respond. Rhode Island is also very vulnerable to tropical and winter storms that may necessitate evacuations or activation of other emergency response systems.

ENVIRONMENT

The state transportation system should maintain and enhance the quality of the state's environment and the livability of its communities.

Transportation projects can enhance the environment and communities --revitalizing city and village streetscapes, restoring historic terminals, preserving scenic vistas, and opening river corridors to bicyclists and pedestrians. Unfortunately, they can also have adverse impacts.

Stormwater runoff from highways must be properly managed to avoid being a significant contributor to water pollution. Where feasible, retention of stormwater within the highway right of way, by providing vegetated buffers for infiltration, offers the most effective and enduring solution. Drainage structures can also control runoff and provide treatment, but require on-going maintenance to retain effectiveness. Integrating the principles of urban forestry into the vegetation regimes for highway rights of way and parking areas can reduce runoff and improve the aesthetics of such facilities.

The transportation sector can be a positive force for improvement of the quality of the air we breathe. Investments to expand transit services, provide bike paths and other facilities to encourage bicycling and walking, and to introduce cleaner fuels and vehicles that are more fuel efficient all contribute to reducing emissions of mobile source air pollutants and greenhouse gases associated with global warming. Public education regarding the effects of auto-dependant land use and development patterns that require excessive commuting or other auto travel may also contribute to greater recognition, over time, of the connection between individual lifestyle choices and air pollution. As fuel prices reach an all-time high, the need to reduce our reliance on foreign oil and turn to renewable sources and conservation measures has never been greater. This plan also begins to explore the impacts that sea-level rise may have on the State's transportation infrastructure.

EQUITY

Inequities in the transportation system can exist as differentials in the levels of ***benefits*** (availability or accessibility to facilities, levels of service, investments in transportation systems) provided to different population groups; or in the degree of ***burdens*** (negative impacts of transportation such as inability to access services and jobs, degradation of air quality, noise levels, impacts on water quality, pollution, disruption to communities, etc.) that different communities or geographic areas are called upon to shoulder. Under federal law (Civil Rights Act of 1964) federal agencies have an obligation to avoid discrimination in the distribution of federal resources and benefits. Executive Order 12898 (Environmental Justice) additionally charges agencies with identifying and addressing, as appropriate, *"disproportionately high and adverse human health or environmental effects"* of their programs, policies, and activities on minority populations and low-income populations. Lower income, elderly and minority populations, and persons with disabilities who lack access to an automobile must deal with daunting personal transportation issues compared to individuals who have automobiles. The transportation needs of suburban and rural populations for access to jobs, medical and other essential services are as acute as in urban areas, and transportation services are generally less available in rural communities. Historically, the participation of lower income, minority, and other transportation-disadvantaged populations in the transportation planning processes has been limited by a lack of information, constraints on the time, mobility and resources of such groups, and, in some instances, cultural and language barriers. Expanded, community-based, outreach approaches should be pursued to better engage low income and minority populations in transportation decision-making to insure that their legitimate transportation needs are fully considered.

The state transportation system should be equitable and just in its distribution of benefits and burdens, and should strive to meet the needs of underserved communities.

FINANCE

The fiscal crisis that was projected in the 2001 and 2004 Plans is now upon us. Transportation finance gaps at the state and federal level threaten to dismantle state transportation programs as we know them. Construction costs have soared in recent years and that has been reflected in project costs. Fuel costs have also risen dramatically, which particularly affects RIPTA's costs. Recent efforts to draw attention to this include the Massachusetts Transportation Finance Commission and the National Surface Transportation Policy and Revenue Study Commission. Both of these Commissions published reports documenting the tremendous unfunded needs and recommending dramatic increases in funding that are required to put the programs back on sustainable courses.

The state transportation system should have a financial base adequate for supporting needed services.

Rhode Island needs to continue weaning itself from over-reliance on long-term bonding for regular transportation expenses. Transit and paratransit operating costs are a growing state responsibility, and it is especially critical to identify a sustainable and long term funding stream for RIPTA to ensure that transit can continue to perform its transportation and social functions in a manner that allows it to increase their ridership. Municipalities need state support for road surfacing. More state-share funds should be found to match the

level of federal transportation funding currently available. The potential for future reductions in federal funds coming to Rhode Island must be contemplated, and strategically planned for. Options for alternative, indigenous funding sources should be explored as a hedge against reduced federal funding, and to provide adequate support for development and maintenance of a functional intermodal transportation system for Rhode Island's future.

HIGHWAY

As the number of registered vehicles and the vehicle miles traveled both continue to increase, and highway capacity remains relatively static, we must continue to improve the performance of our existing highway system. Traffic flow and safety can benefit from new technology, such as motorist information systems, centrally coordinated traffic monitoring and control, signal timing, and other Intelligent Transportation System (ITS) technologies. Mainstreaming consideration of ITS opportunities into planned transportation projects will accelerate the potential benefits of this new technology. Coordinated development with combined access points can preserve the functional capacity of arterial highways, reducing congestion. Regularly scheduled pavement and bridge management can avoid failures, such as the bridge collapse in Minneapolis in 2006, and eventual, more costly replacements or reconstructions. Investments should continue to concentrate on maintenance and operations, rather than new highway building. The TIP for FY 2009-2012 reflects a concerted effort to address bridge structural deficiencies, which is a critical need, but does take away from other TIP programs. This Plan also stresses greater use of access management and congestion management to obtain greater functionality from our highway system.

See Map # 5-4 Intelligent Transportation Systems

INTERMODAL

The growing momentum towards intermodal transportation must be sustained and cultivated as an underlying philosophy for organizing the transportation system at the state, regional and municipal levels. Continued emphasis on modal diversification and intermodal linkages will strengthen the state's transportation system, reduce pollution, and offer convenient, efficient, and enjoyable means for visitors to traverse the state. Intermodal concepts and projects have greatly increased over the last decade, but opportunities remain for strengthening the linkages among various modes, and for expanding the diversity of travel options available to Rhode Island residents and visitors. A boom in airport patronage, the inauguration of high-speed rail, and the extension of commuter rail presage success for the planned intermodal connection of T.F. Green State Airport with the Northeast Rail Corridor. Intermodal terminals are needed in other places, and meticulous attention must be paid to coordinated scheduling, traveler information services and accurate, well-placed signage to fully support a convenient and effective intermodal system. Convenient intermodal connections can encourage transit usage. Trains to bus, ferry to bus, and airport to other modes -- all need stimulus.

LAND USE AND CORRIDORS

Our state is the second most densely populated in the country. Existing urban places and locations that are suitable for development need improved transportation services, but open space and pristine rural areas should not be sacrificed. To preserve the beauty of Rhode Island for future generations, state transportation planning and design must work hand-in-hand with cities and towns to manage land development and establish standards for roads, sidewalks, shared-use paths and transit facilities that are responsive to safety, travel demand, capacity, environmental, and aesthetic concerns. Land Use 2025 will play a key role in shaping the State's development, primarily by the establishment of an Urban Services Area. This area has the water and sewer infrastructure to support increased density, which in turn can sustain public transportation.

The state transportation system should support desired land use patterns- the concentration of growth in existing urban centers, and in locations suitable and planned for more intensive development.

Land use decisions *also* need to support transportation system objectives. The nature and character of development allowed by communities must be related to the level of transportation infrastructure available and planned. An orientation to transit, bicycle, and pedestrian needs in the siting and design of new development can support transportation goals, reduce vehicle trips, make transit service more viable, and improve safety. The state's transportation planning process should continue to build on an intermediate framework for analysis of travel corridor needs to integrate the statewide policies expressed in this plan with regional considerations and local plans, and to provide a process for individual transportation projects to be planned and coordinated within a context of regional needs and statewide policies.

PEDESTRIAN

Pedestrian (and bicycle) travel can be made safer and more appealing when these modes of transportation are consistently mainstreamed into project and community planning and design. Greater consideration to opportunities for *encouraging* pedestrian travel in all aspects of community planning and project design will improve safety, support transit, encourage more healthful lifestyles, invigorate downtown areas, and enhance community livability. Communities should embrace the principles of walkable communities and use tools available (such as traffic calming, restoring 2-way traffic flow on one-way streets, reducing curb radii, maintaining crosswalks and signals, etc.) to encourage pedestrian activity. The Safe Routes to School Program established by SAFETEA-LU strives to create a better and safer walking environment for school children, consistent with goals of reducing congestion, improving air quality, and encouraging healthy lifestyles.

PLANNING

Federal funding agencies require metropolitan planning organizations to maintain a "comprehensive, cooperative, and continuing" planning process. This entails cooperation with all levels of government, the public, and other stakeholders. Additionally, in Rhode Island, all cities and towns are required to adopt

comprehensive plans consistent with the State Guide Plan. This enhances the planning relationships with communities and broadens transportation planning to include other topics such as economic development, land use, and the environment. Rhode Island's vision for transportation is built on a solid base of public involvement; and it can continue to evolve by welcoming the participation of all users, public sector officials, the business community, and interest groups, with special attention to engaging disadvantaged populations.

SAFETY

As one of FHWA's "vital few" focus areas, safety has a prominent presence in this plan with respect to all modes of transportation. As crash reporting data systems improve, analysis of locations and causes of crashes should become more precise. However, with the increasing number of elderly drivers and increasing vehicle miles traveled (VMT), reducing fatalities and injuries on the roadways will be a daunting task. This task can be accomplished through better roadway and vehicle design, increased awareness and behavior changes, as well as more stringent laws and stepped up enforcement. RIDOT recently completed the 2012 Rhode Island Strategic Highway Safety Plan which provides short and medium term strategies in five areas where fatalities will lead toward zero deaths.

TRANSIT

RIPTA represents a significant public investment that serves the public interest in many ways. It carries employees to their workplaces. It strengthens urban communities by serving people who do not drive -- students, low-income families, elderly and disabled persons, and also helps some individuals to live independently. It reduces congestion and pollution and conserves energy. An effective and convenient transit system can be an alternative to single-occupant auto travel, and RIPTA should continue to attract riders who would otherwise drive alone. Marketing and outreach are key to the success of the various transit services that are offered. RIPTA also needs to continue to redesign its routes and offer a new array of bus, van, and other services to meet the changing markets for transit. But the system needs a sustainable source of operating funds, regular maintenance, and replacement of equipment and facilities. RIPTA's funding needs are as acute as RIDOT's, and they are now facing a loss of revenue streams. In spite of these financial difficulties, they have been extremely successful in attracting riders, and in fact ridership is at an all-time high, and some bus routes are over-crowded. At the time this Plan was written, RIPTA was embarking on a Metropolitan Transit Study that will continue the work of the Transit 2020 Group and the Special Legislative Commission. This Study occurs at a time when there is energy in the community around the future of transit and it certainly bears watching.

The state transportation system should add new services to reflect new travel demands and shifts in usage, and to offer attractive intermodal travel alternatives to reduce private (single occupancy) automobile use.

BICYCLE

GOAL	**B**	Maintain and expand an integrated statewide network of on-road and off-road bicycle routes to provide a safe means of travel for commuting, recreation, and tourism in order to improve public health, and reduce auto congestion and dependency.
OBJECTIVES	**B.1.a**	Increase bicycle ridership.
	B.1.b	Complete Rhode Island portion of East Coast Greenway.
	B.1.c	Complete the 200 mile integrated statewide bicycle system as recommended in the Greenspace and Greenways Element of the state Guide Plan by 2020.
POLICIES	**B.2.a**	Maintain existing bicycle paths and on-street lanes in a clean, safe, and attractive condition.
	B.2.b	Expand the on and off-road bicycle network – prioritizing projects that provide links between bike paths, seamless connections to other modes, or have the potential to reduce automobile traffic. This includes provision of facilities such as bike racks, lockers, showers, etc.
	B.2.c	Encourage cities and towns to address bicycle transportation in comprehensive plans. Promote locally sponsored bicycle facilities which connect with and complement the state system.
	B.2.d	Adhere to the "bicycle tolerant" design philosophy in all highway reconstructions. Include experienced bicyclists in the design review process for both on and off road bicycle routes.
	B.2.e	Promote bicycling as a viable transportation choice for commuters, students, and tourists. Businesses receiving state funding for expansion should accommodate bicycle commuting by providing user facilities if safe and reasonable connections can be made to an existing bicycle route.
	B.2.f	Provide ADA compliant accommodations for pedestrians, skateboards, non-motorized scooters, roller blades/skates, strollers, motorized and non-motorized wheelchairs on off-road paths.
	B.2.g	Cooperate with public and private sector entities to promote and provide a resource for healthy recreation activities.

BICYCLE

STRATEGIES	**B.3.a**	Design on-road bike lanes in urban areas with a minimum acceptable width to ensure bicyclist safety; include adequate striping, signage, and, where possible, physical barriers to separate bike lanes from motor vehicles and make them clearly visible to motorists. Explore new technologies that can detect bicyclists at signalized intersections.
	B.3.b	Install bike-parking facilities and cyclist amenities at public properties such as schools, community centers, libraries, and parking garages. Encourage businesses to do the same.
	B.3.c	Maintain bicycle paths and lanes free from debris and excess sand. Maintain surfaces, signage, striping, lighting, and drainage structures.
	B.3.d	Determine a safe and convenient means for providing bicycle access across the Pell, Jamestown, Mt. Hope, and Sakonnet River bridges.
	B.3.e	Develop a system of naming, route designation, and signage/marking for the statewide bikeway system. The system should be consistent with national standards and the system developed by the East Coast Greenway Alliance (as it applies to the Rhode Island segment of the East Coast Greenway) and done in conjunction with host communities that maintain paths.
	B.3.f	Republish the RIDOT "Guide to Cycling in the Ocean State" and a RI greenways or trails map on a periodic, continuing basis. Work with FHWA to allow designation of bike related businesses on the map, and in exchange, seek private sponsorship and maintenance of the path by the businesses.
	B.3.g	Continue to offer grants to local governments and non-profit groups for trail and greenway development under the National Recreational Trails Program administered by DEM.
	B.3.h	Develop a statewide trail plan, which inventories existing trails and provides a detailed trail development and maintenance program in support of the recommendations of the Greenspace and Greenways Plan.
	B.3.i	Utilize the Bicycle/Pedestrian Program of the TIP to help fund bike path and bike lane construction.
	B.3.j	Utilize the Safe Routes To School Program for infrastructure and non-infrastructure projects to improve bicycling safety for school children.
PERFORMANCE MEASURES	**B.4.a**	Increase mode share of bicycle commuters [included in "Other" as defined by US Census] from 1.0% to 1.2% in 2010, 1.5% in 2020 and 1.7% in 2030.
	B.4.b	Complete the RI portion of the East Coast Greenway (25 miles by 2015).
	B.4.c	Complete the 200 mile integrated statewide bicycle system as recommended in the Greenspace and Greenways Element of the state Guide Plan by 2030.

DESIGN

GOAL	**D**	Strive for excellence in design of transportation projects to enhance safety, security, mobility, environmental stewardship, aesthetic quality, and community livability.
OBJECTIVES	**D.1.a**	Improve safety for all users. (See Safety Section)
	D.1.b	Improve mobility by designing roadways that accommodate pedestrians, cyclists, and the mobility impaired as well as vehicular travel.
	D.1.c	Improve air and water quality. (See Environmental Section)
	D.1.d	Improve appearance, community livability, and business viability.
POLICIES	**D.2.a**	Utilize context sensitive design solutions for roads and streets which respond to the environs in which they are located, while adhering to appropriate requirements for safety and capacity. These must be flexible to adapt to different situations and must consider bicycle and pedestrian accommodations where feasible.
	D.2.b	Emphasize effective and attractive signage that clearly conveys essential safety and directional information to travelers. Where appropriate, employ gateway signage to distinguish regions and themes and to provide increased identification for transportation facilities, business and civic centers, historic districts, institutions, tourist destinations, and natural features like rivers and watersheds.
	D.2.c	Enhance community livability and create inviting public spaces through traffic calming, pedestrian amenities, view corridors, and attractive landscaping, where appropriate.
	D.2.d	Manage vegetation in transportation rights-of-way for multiple objectives: safety, air and water quality, noise reduction, community aesthetics, and natural habitat values.
	D.2.e	Encourage communities to identify design objectives (including bicycle, pedestrian, landscaping and aesthetic goals) for arterials, gateways, major intersections, and collector streets in local comprehensive plans, especially for designated scenic routes and connection to appropriate business areas.
	D.2.f	Consider environmental enhancements, noise reduction, and energy efficiency in facility design and construction.
	D.2.g	Support reduction in the number of billboards and other outdoor advertising to enhance the visual quality of the transportation system. Ensure that electronic outdoor advertising is limited to avoid driver distraction.

STRATEGIES		
	D.3.a	Promote the development and management of transportation corridors as greenways, that have the appearance of parkways and boulevards.
	D.3.b	Encourage the retention and use of vegetated buffers to reduce stormwater runoff from highways and parking lots, lessen air quality impacts, and to serve as noise barriers along high-volume highways and rail corridors.
	D.3.c	Encourage communities to require the reservation of planting strips of sufficient width for street trees in plans for new streets and roads approved under local subdivision and land development review provisions.
	D.3.d	Redesign curb cuts and improve sidewalk conditions to facilitate movement of wheelchair-assisted travelers, particularly near transit stops. Insure compliance of “as built” conditions with ADA guidelines. Utilize the most effective crosswalk designs based on industry research.
	D.3.e	Work with communities to implement traffic-calming measures where appropriate to slow traffic speeds in built-up areas. Encourage participation of local residents in design of traffic calming measures which may include on-street parking, roundabouts, and restoration of two-way traffic on one-way streets.
	D.3.f	Continue to offer 50% participation when replacing overhead utility lines underground when highway construction requires their relocation in "Main Street" areas or other areas of economic or natural significance.
	D.3.g	Urban parking garages should have ground floor retail, and urban parking lots should have "liner" buildings with retail activities to create more walkable environments.
	D.3.h	Utilize Best Management Practices and most current design standards in all areas of design.
	D.3.i	Continue to offer opportunities for local governments and non-profit groups to implement non-traditional transportation projects through the Transportation Enhancement program funded and administered by RIDOT.

ECONOMIC DEVELOPMENT | *employment, freight, downtown, and tourism*

GOAL	**ED**	Support a vigorous economy by facilitating the multi-modal movement of freight and passengers within Rhode Island and the northeast region.
OBJECTIVES	**ED.1.a**	Move people efficiently to and from work and school.
	ED.1.b	Move freight efficiently to, from, and within Rhode Island by all modes.
	ED.1.c	Revitalize and maintain economically healthy “street-centric” downtown areas and village centers.
	ED.1.d	Move tourists and conventioneers efficiently to, from, and within Rhode Island, especially through public transportation.
POLICIES	**ED.2.a**	Proactively work with state agencies and other stakeholders to determine needs of employers, employees, un- and under-employed individuals, and students, and strive for transportation options that support full employment and educational opportunities.
	ED.2.b	Provide viable and affordable transportation options.
	ED.2.c	Support regional examination and planning of interstate transportation-related economic development issues.
	ED.2.d	Ensure that freight rail continues to serve the region. Join with other New England states in participating in decision-making on changes in regional rail service, such as changes in ownership, rate structure, maintenance of the network, and accommodating intercity passenger rail service.
	ED.2.e	Encourage provision of all appropriate transportation services and facilities at key freight locations including freight rail, highway, port, airport, transit, and commuter alternatives. Consider short sea shipping opportunities.
	ED.2.f	Use transportation to support economic development that takes place in existing built-up areas or on prime sites suitable for intensive development. Transportation investments should support both intra and interstate regional economic development opportunities. Examples are development of prime industrial sites in Quonset Davisville, Cranston and East Providence; Warwick's proposed mixed-use center near the airport; and the Blackstone Valley in a way that preserves its historic and natural character.
	ED.2.g	Use transportation investments to support community economic development including village centers, “Main Streets”, central business districts, and brownfields.
	ED.2.h	Utilize transportation investments to support tourism, one of the state's most important industries. Strengthen linkages between the Providence metropolitan center, air and rail terminals, and tourist attractions in Newport, South County, and the Blackstone Valley.
	ED.2.i	Recognize Narragansett Bay as a critical waterway and transportation asset for fuel transport and other freight.

STRATEGIES

ED.3.a	Develop transportation strategies to implement welfare-to-work goals, as a cooperative effort among the Department of Human Services, the Department of Labor and Training, RIEDC, RIPTA, RIDOT, and the Statewide Planning Program. Utilize existing resources where feasible.
ED.3.b	Encourage dialogue with private businesses to design innovative transportation strategies that will help low-income residents and individuals who do not own cars access employment, particularly jobs in suburban areas.
ED.3.c	Determine the needed transit, ridesharing, and bicycle/pedestrian facilities and services for the increased number of commuters. Provide these facilities and services, so as to maximize the efficiency of the transportation system.
ED.3.d	Continue transportation initiatives that enable low income workers and job seekers to access job opportunities and achieve economic independence.
ED.3.e	Expand the Access to Jobs/Reverse Commute Program to include additional municipalities and welfare populations. Increased funding and program expansion will help ensure that additional unemployed populations experiencing transportation difficulties benefit from access to the program.
ED.3.f	Investigate HUD's "Bridges to Work" model to involve employers in provision of transportation for low-income employees.
ED.3.g	Incorporate additional state agencies as partners in addressing transportation inequities in job access. The Department of Labor and Training and the Rhode Island Economic Development Corporation should be included in discussions with transportation agencies.
ED.3.h	Provide incentives for employers to offer transportation to low-income employees lacking reliable transportation options. An incentive-based program for suburban employers who offer transportation for low-income urban residents could increase the likelihood that urban residents can access and maintain well-paying jobs.
ED.3.i	Consider options for car-sharing programs or car purchase assistance for low-income populations [North Carolina, Tennessee, and New Jersey have experimented with programs to help low-income families purchase vehicles].
ED.3.j	Continue to evaluate a full interchange at Route 4 / Interstate 95, and complete the Relocated Route 403 to support the full development of Quonset Davisville. Construct a new interchange subject to successful outcome of environmental and TIP processes.
ED.3.k	Work with RIDOT, AMTRAK and P&W Railroad to establish reasonable access fees and freight charges on the AMTRAK main line, especially on sections of track added through the FRIP. Support bridge clearance programs in other states that open up new markets for freight rail.
ED.3.l	Complete development of the Warwick Intermodal Rail Station, plan for rail shuttle service to provide a direct rail connection from Providence to T.F. Green State Airport, and support revitalization of the adjacent Warwick Station District.

STRATEGIES (continued)	**ED.3.m**	Study improved access to the Port of Providence from the Interstate system and rail improvements within the terminal area.
	ED.3.n	Use transportation system investments strategically to support the economic vitality of historic “Main Streets” and similar traditional village and business centers, as well as brownfields and mill villages.
	ED.3.o	Encourage cities and towns to regulate maximum as well as minimum number of parking spaces in their development regulations to give incentives to use alternative modes. Encourage shared parking where differences in peak hour demand allows.
	ED.3.p	Use the Transportation Enhancements Program funded and administered by RIDOT to encourage urban revitalization, such as “Main Street Rhode Island” restoration activities.
	ED.3.q	Continue to make traffic, construction, and lane closure information available on RIDOT's website.
	ED.3.r	Utilize signs at "gateway" locations, to direct tourists to key destination points. Work with regional and local tourism organizations.
	ED.3.s	Emphasize effective and attractive signage that clearly conveys essential safety and directional information to travelers. Where appropriate, employ gateway signage to distinguish regions and themes and to provide increased identification for transportation facilities, business and civic centers, historic districts, institutions, tourist destinations, and natural features like rivers and watersheds. Consider designating "scenic drives" throughout the state.
	ED.3.t	Encourage state financing assistance to developments in areas that are transit accessible.
	ED.3.u	Develop incentives to encourage employers to locate in older central city centers, where transit or other modes are available.
	ED.3.v	Locate sites for new or expanded truck rest areas. Upgrade current rest areas to include electricity, lighting and other facilities as appropriate.
	ED.3.w	Identify and map • Interstate and STRAHNET bridges and overpasses that do not meet 16’ federal defense clearance standard • State highway locations with high-wide clearance or weight restrictions • Rail locations with high-wide clearance or weight restrictions
PERFORMANCE MEASURES	**ED.4.a**	Recruit one new college or university per year for 5 years for RIPTA’s University Pass Program.
	ED.4.b	Freight [see Highway Performance Measures related to congestion and infrastructure condition].
	ED.4.c	Increase Providence – Newport ferry ridership (almost exclusively leisure/tourism trips) from 38,576 in 2003 by 3% per year.
	ED.4.d	Increase summer ridership on RIPTA Route 67 (Newport mansions). Set baseline when new farebox system is installed.

EMERGENCY RESPONSE

GOAL	**ER**	Develop transportation and communication systems that serve Rhode Islanders and the region in the event of natural disasters, accidents, and acts of terrorism in a manner that minimizes injury, loss of life, and disruption to the economy; facilitates evacuation of people; and allows emergency response and recovery activities to occur.
OBJECTIVES	**ER.1.a**	Provide a functional system of hurricane evacuation routes.
	ER.1.b	Provide functional diversion routes for Interstates and other major highways.
	ER.1.c	Provide uncongested routes to hospitals with emergency care facilities.
POLICIES	**ER.2.a**	Projects that serve a dual purpose (such as congestion relief and emergency response) should be given greater consideration than single purpose projects.
	ER.2.b	Invest transportation resources in infrastructure such as communications facilities that benefit the transportation system.
	ER.2.c	Continue to improve and enhance interstate communication and cooperation through the I-95 Corridor Coalition and direct contact with agencies in Massachusetts and Connecticut.
	ER.2.d	Employ prevention and mitigation strategies in design of new projects.
	ER.2.e	Coordinate with US Coast Guard and others in assessing safety risks of transporting potentially hazardous cargo on Narragansett Bay and throughout the state on other modes.
	ER.2.f	Promote redundancy in key transportation infrastructure (including highway, transit, rail, airports, pipeline, ports, and shipping channels) to ensure continued passenger and freight service in case one or more modes becomes unavailable for any reason.
	ER.2.g	Emphasize training for state and local officials as a means to maintain highest state of readiness and preparedness. Encourage training exercises with federal and regional partners.
	ER.2.h	Emphasize the importance of communication and coordination between state and local governments to achieve effective response and recovery.
	ER.2.i	Disseminate information to the general public in a timely manner to improve preparedness and facilitate response and recovery.
	ER.2.j	Ensure that RI's 911 system remains functional and that dedicated funding streams are not diverted to other uses.
	ER.2.k	Proactively plan for evacuation of transit dependent populations and people with disabilities.

EMERGENCY RESPONSE

STRATEGIES	**ER.3.a**	Project development should incorporate Best Management Practices and most recent design standards (such as blast-proofing, surveillance, fencing, hardening, seismic retrofitting, bicycle storage, jersey barrier breaks, traffic signal prioritization, fiber-optic cable installation in roadways, communication interoperability, etc.)
	ER.3.b	Improve diversionary roads and alternate facilities to function in the event of an emergency. [Diversionary routes for Interstates and other major highways were identified in 2003.] Update as necessary and identify network deficiencies including ITS infrastructure.
	ER.3.c	Monitor and update hurricane evacuation plan, and continue with operational planning for traffic control points and pre-positioned towing and fuel trucks. Update evacuation plans for Providence in light of increased population in vulnerable downtown areas. Pay special attention to populations without vehicles.
	ER.3.d	Monitor traffic congestion near hospitals with emergency facilities and respond with appropriate traffic control measures as necessary.
	ER.3.e	Continue to implement RI Tactical Emergency Response Network (statewide communication system).
	ER.3.f	Continue to deploy ITS hardware as prescribed in "RhodeWAYS" and install fiber-optic cable conduit in all appropriate areas during highway reconstructions. Maintain and adhere to Incident Response Plan and continue to convene Incident Management Task Force.
	ER.3.g	Coordinate early school and work dismissal due to heavy snow or other such events.
	ER.3.h	Prepare Evacuation Plan for Kennedy Plaza and identify site for alternate transit hub.
	ER.3.i	Encourage cities and towns to address homeland security and emergency response in the comprehensive planning process, and provide necessary guidance.
	ER.3.j	Utilize ITS and public transit to better manage travel during heavy snow and rain events.
	ER.3.k	Conduct risk assessment for transportation of hazardous cargo over critical infrastructure and through densely populated areas.
PERFORMANCE MEASURES	**ER.4.a**	Improve incident clearance time on Interstate highways from an average time of 40 minutes in 2008 to 38 minutes in 2010, 35 minutes in 2020, and 30 minutes in 2030.
	ER.4.b	Primary routes to all hospitals with emergency care facilities should function at Level of Service C or better by 2015.

ENVIRONMENT | *air, water, energy, community livability*

GOAL	**EN**	Recognize, protect and enhance the quality of the state's environmental resources and the livability of its communities through well-designed transportation projects and effective operation of the transportation system.
OBJECTIVES	**EN.1.a**	Improve air quality.
	EN.1.b	Manage stormwater runoff from roadways to improve quality of receiving waters.
	EN.1.c	Conserve energy.
	EN.1.d	Enhance community livability and visual quality.
POLICIES	**EN.2.a**	Reduce emissions of air pollutants and greenhouse gases from mobile sources, and conserve energy by reducing vehicles miles traveled; reducing the number of single occupant vehicle trips; promoting increased usage of high efficiency vehicle technologies; and retaining vegetated buffers.
	EN.2.b	Manage stormwater runoff from roadways and reduce pollutants through retrofit and maintenance of stormdrains, implementation of best management practices, retention of trees within rights-of-way to provide vegetated buffers for infiltration, limiting the use of de-icing chemicals (consistent with safety), and other approaches, especially within the watersheds of impaired waters and over groundwater aquifers. Promote the use of "grassy strips" for snow storage.
	EN.2.c	Utilize transportation programs and projects to maintain and enhance environmental quality and community livability, by including practices such as historic and scenic preservation, open space acquisition, landscaping, streetscaping, and recycling to improve aesthetics, and contribute to water and air quality improvements.
	EN.2.d	Ensure that the transportation planning and project programming embrace the principles of environmental stewardship through measures to avoid, minimize, or mitigate cumulative environmental impacts on affected communities. Utilize existing and new environmental resource data to estimate the additional burdens or benefits projects will have on wildlife, air quality and water quality.
	EN.2.e	Minimize conflicts between the transportation system and wildlife resources.
	EN.2.f	Acknowledge that sea-level rise may threaten transportation facilities, and plan infrastructure improvements accordingly. (See PL.3.v)

STRATEGIES

EN.3.a	Reduce VMT's and SOV's through development and utilization of alternative travel modes (bus, rail, and ferry transit, bicycle, and pedestrian) and encouraging ride-sharing (carpools and vanpools).
EN.3.b	Promote adoption of municipal land development provisions that require integration of bicycle and pedestrian facilities (bikeways, bike lanes, and bicycle user facilities; paths, sidewalks, nature trails) as part of development and redevelopment.
EN.3.c	Retain and expand vegetated buffers and other landscape elements within transportation corridor rights of way and within private developments (especially those in urban areas or receiving public support) wherever possible to filter stormwater, improve air quality, act as a noise buffer, mitigate heat island effects, and improve the visual quality. (See related recommendations of the Urban Forest Element of the State Guide Plan.) Utilize BMP's in mowing to avoid erosion and according to plant and flower self-seeding seasons. Remove non-native invasive species where feasible. Strive for a 2:1 wetland replacement ratio on site.
EN.3.d	Manage highway runoff as a system wide mitigation measure to improve water quality and maintain watershed integrity. To the extent possible, retain stormwater in the rights of way of state highways. Implement the six Phase II minimum requirements under the federal/state stormwater management programs. Fund and implement stormwater retrofits and best management practices in areas designated as priorities by DEM 303(d) list and where transportation corridors intersect bodies of water. Continue cooperation and consultation with DEM and the Coastal Resources Management Council (CRMC), and coordinate with municipalities on the design and construction of efficient and environmentally friendly stormwater drainage systems, including the construction of stormwater retrofit "best management practices" identified through DEM's TMDL Program. Promote pre-treatment for stormwater for infiltration and use of porous pavements over recharge areas. Ensure that maintenance of highway stormwater drainage systems (including street sweeping) is a funded priority. Explore opportunities to test stormwater for possible use in irrigation.
EN.3.e	Continue to add alternative fuel technology vehicles to the state and local vehicle fleets while promoting diesel retrofitting of older vehicles. Encourage greater use of hybrid electric / gasoline vehicles that do not require special fueling stations. Continue to replace or upgrade older transit vehicles with clean fuel vehicles. Implementation of school bus diesel retrofits should begin in urban school districts where children are exposed to higher levels of air pollution.
EN.3.f	Support passage of legislation establishing a Vehicle Efficiency Incentive Program that provides rebates to purchasers of new fuel efficient vehicles, funded by fees charged to purchasers of inefficient vehicles.
EN.3.g	Effectively use Intelligent Transportation System technologies to reduce recurring and non-recurring congestion and thereby reducing idling emissions. Electrify major truck stops to provide shore power to vehicles during mandated rest periods. Support controls on unnecessary idling of diesel trucks and buses.
EN.3.h	Take prudent and cost effective measures to minimize noise pollution, such as quieter pavements and vegetation buffers.
EN.3.i	Continue to utilize the Transportation Enhancement, Congestion Mitigation / Air Quality, and Safe Routes To School Programs to fund projects that benefit the environment.

STRATEGIES (continued)	**EN.3.j**	Accelerate replacement of incandescent bulbs in traffic and pedestrian signals with Light Emitting Diodes (LED's)
	EN.3.k	Develop an improved motor vehicle registration system to provide accurate and current data for use in air quality analyses.
	EN.3.l	Accommodate wildlife populations along highways with such things as "critter crossings", deer reflectors and animal friendly culvert designs.
	EN.3.m	Encourage the use of solar energy, and "green" design and construction practices in transportation projects.
	EN.3.n	Recognize culturally significant stone landscapes in EIS and EA process of transportation project development.
	EN.3.o	Encourage state officials to work with the MBTA and other parties on future electrification of the commuter rail system.
PERFORMANCE MEASURES	**EN.4.a**	Mode split (as defined by US Census Journey to Work) Reduce "Drive Alone" from 80% in 2000 to 79% in 2010, 78% in 2020, and 77.1% in 2030. Increase "Carpool" from 10.4% in 2000 to 10.6% in 2010, 10.9% in 2020, and 11.1% in 2030. Increase "Walk or Work at Home" from 6.1% in 2000 to 6.4% in 2010, 6.6% in 2020 and 6.9% in 2030. Increase "Other" [includes bicycle] from 1.0% in 2000 to 1.2% in 2010, 1.5% in 2020, and 1.7% in 2030.
	EN.4.b	Transit ridership (see Transit section).
	EN.4.c	Meet reasonable further progress goals for VOC and NOx emissions; attain the 8-hour standard of 0.075 parts per million; and continue attainment of all other NAAQS.
	EN.4.d	Reduce Greenhouse Gas emissions to 1990 levels by 2010 and to 90% of 1990 levels by 2020 consistent with New England Governors and Eastern Canadian Premiers pact.
	EN.4.e	Attainment of goals established for water bodies in RIDEM's 303d report.
	EN.4.f	Reduce gallons of gasoline purchased from 400,000,000 gallons in 2002 to 379,000,000 gallons (1990 level) in 2010, 341,000,000 (10% below 1990 level) in 2020, and 320,000,000 in 2030.

EQUITY

GOAL	**EQ**	Ensure that the transportation system equitably serves all Rhode Islanders regardless of race, ethnic origin, income, age, mobility impairment, or geographic location.
OBJECTIVES	**EQ.1.a**	Provide equitable access to transportation services.
	EQ.1.b	Provide equitable distribution of transportation projects and improvements.
POLICIES	**EQ.2.a**	Proactively work with state agencies and other stakeholders to determine needs of underrepresented population, and strive for transportation options that encourage independence.
	EQ.2.b	Ensure that transportation projects do not place disproportionate adverse environmental or other impacts on any community or population group.
	EQ.2.c	Avoid displacement or loss of transportation services to populations of concern. Work to improve transit and other transportation services which directly benefit low income, minority, elderly, and disabled populations.
STRATEGIES	**EQ.3.a**	Allocate resources through the Transportation Improvement Program to provide equitable service outcomes to all populations. Analyze location of TIP projects to ensure that various geographic areas and minority areas receive a fair number of projects.
	EQ.3.b	Give the public better information on transportation modes, such as the availability of different modes, the services provided, how they are accessed, and their costs, through all media on a continuous basis. Seek ways to communicate with various ethnic groups. Emphasize public transportation, and include services for disabled people.
	EQ.3.c	Provide technical and financial assistance where feasible to private, non-profit, highly specialized transportation operators serving needs of severely handicapped persons.
	EQ.3.d	Amend CMAQ criteria to award more points to projects improving air quality in areas close to freeways and encourage RIDEM to prioritize urban areas in their school bus diesel retrofit program.
	EQ.3.e	Identify schools within 250 feet of interstates and freeways. Conduct historical analysis for EJ populations potential exposure, and discourage construction of new housing within this zone.
PERFORMANCE MEASURES	**EQ.4.a**	Increase percentage of Family Independence Program (FIP) recipients residing within ¼ mile of fixed transit route from 91% in 2000 to 92% in 2010, 93% in 2020, and 94% in 2030.
	EQ.4.b	Maintain transportation spending levels and number of projects in minority and low-income census tracts at or above the percentage of that minority. [For example, in 2000, 8.9% of RI's population was Hispanic. Fifty –five census tracts contained greater than the state average of Hispanics. Transportation spending and number of projects in those 55 tracts should equal or exceed 8.9% in TIP categories of Enhancements, Highway, Pavement Management, and Bicycle/Pedestrian.

FINANCE

GOAL	**F**	Provide a sustainable financial base for the transportation system that is adequate for supporting needed infrastructure and services with an emphasis on preservation and management of the existing system.
OBJECTIVES	**F.1.a**	Increase transportation funding
	F.1.b	Reduce level of transportation bonding
	F.1.c	Provide long term and sustainable financing for RIPTA
	F.1.d	Ensure responsible project programming and spending
	F.1.e	Maintain sound accounting practices
POLICIES	**F.2.a**	Aggressively seek additional financing sources and mechanisms for transportation projects, including joint development opportunities.
	F.2.b	Allocate existing user fees to transportation uses and explore new user fees.
	F.2.c	Phase out the use of general obligation bonds to match federal funds Repayment of bond debt is a burden on transportation resources. Projects and programs should be funded on a pay-as-you-go basis except for large projects with a long useful life.
	F.2.d	Support RIPTA with a long term dedicated and sustainable funded program to maintain and improve bus, trolley, and ferry service.
	F.2.e	Clarify and publicize the priorities for transportation investments and procedures for allocation of funds.
	F.2.f	Ensure that commitments to existing (approved) projects are met before initiating major new projects which require substantial new funding commitments (except under extraordinary circumstances).
	F.2.g	Provide RIDOT and RIPTA with the necessary resources to track revenues, expenditures, cost increases, contracts, etc. and report periodically to the Transportation Advisory Committee.
	F.2.h	Congressional earmarks that result in the deferral of other TIP projects are discouraged.

FINANCE

STRATEGIES

F.3.a	Convert the remaining auto user fees into a transportation fund. This includes motor vehicle registration fees, driver's license fees, and inspection fees.
F.3.b	Continue increased allocation of gasoline tax revenues to RIPTA and RIDOT and maintain a tax level appropriate to support the transportation system's needs. In order to maintain purchasing power, index the gas tax to the inflation rate.
F.3.c	Consider tolls as another form of user fee where feasible. Study an automated cashless system of collection where toll facilities are or could be used. Also, study variable toll structures based on time of day and vehicle weights.
F.3.d	Use debt financing judiciously for major capital projects.
F.3.e	Provide sufficient seed funding for the new Rhode Island State Infrastructure Bank.
F.3.f	Consider Special Benefit Assessment Districts and Business Improvement Districts (BID). Property owners would be assessed for new highway improvements that support an area. This type of designation may require legislation.
F.3.g	Designate Transit Services Districts (TSD). Property owners would be assessed for transit service in lieu of creation of parking facilities in urban areas.
F.3.h	Allow Infrastructure Equity Contributions by abutters, also known as stakeholders' investments. Special "densification zoning" assists this undertaking.
F.3.i	Consider the use of dedicated sales taxes (such as was done for Depositors Economic Protection Corporation [DEPCO]) to reduce transportation bond indebtedness.
F.3.j	Phase out reliance on bonds to fund system preservation costs, by shifting to user fees and tax revenues.
F.3.k	Recognize that even allocation of all gasoline tax revenues (at the current level) will not be sufficient to meet RIDOT and RIPTA needs for operations, debt service, and match for federal capital funds. New financing sources must be developed as soon as possible, with the intent to reduce reliance on bonding and debt service, while maintaining services.
F.3.l	Develop a fare structure for paratransit service, and charge a fare for all paratransit services. (At present, fares are charged only to Americans with Disabilities/ADA clients.) Give incentives to riders to use the less costly fixed-route bus system over paratransit services to meet their basic transportation needs where applicable. Charge an administrative fee for paratransit services to cover RIde administrative costs. In accordance with the amount of services consumed, continue to use FTA Elderly and Persons with Disabilities Funding Program to purchase vehicles for RIde Program.
F.3.m	Work to achieve RIPTA's target for transit revenues as a percentage of operating costs, and promote early accomplishment. RIPTA has set a goal (F.4.d) of recovering 35 percent of operating costs from farebox revenues.

FINANCE

STRATEGIES (continued)	**F.3.n**	Quantify unfunded federal mandates, in particular ADA service, which is escalating each year.
	F.3.o	Work on development of a fare structure for human and educational services that purchase and/or provide transportation services in conjunction with their primary responsibilities.
	F.3.p	Establish a state-funded grant program for municipalities to help fund local road improvements (resurfacing and rehabilitation, sidewalks, bike routes, traffic calming, Safe Routes To School, etc.) Use a formula that includes factors such as road mileage, functional classification, and vehicle registrations.
	F.3.q	Continue to develop and distribute the Transportation Improvement Program (TIP) using an extensive public involvement process. Periodically review and revise the TIP project selection criteria to support the goals and objectives of this plan. Amend the TIP as necessary pursuant to established procedures.
	F.3.r	Calculate and publicize the costs and benefits of major transportation investments.
	F.3.s	Select more projects that are lower in cost, faster to implement, and give more transportation performance for the dollar.
	F.3.t	Provide TIP status reports (including project and funding status) periodically to the Transportation Advisory Committee (TAC).
	F.3.u	Install an accounting system that can track all project costs, including design.
PERFORMANCE MEASURES	**F.4.a**	The transportation program should increase at least with inflation rate through 2030 to provide for a responsibly maintained system that is in a state of good repair and does not rely upon debt financing..
	F.4.b	Phase out the use of general obligation bonds used to match federal funds by 2010.
	F.4.c	Project cost overruns should not exceed 10%.
	F.4.d	Increase RIPTA's fixed-route farebox recovery ratio until it reaches 35 percent. (Set baseline when one year of new farebox data is available.)

HIGHWAY

GOAL	**H**	Maintain the highway and bridge network in a safe, attractive, and less congested condition to carry passenger vehicles, commercial vehicles, government vehicles, and transit vehicles, as well as bicycles and pedestrians. Recognize roadways as vital public spaces that accommodate travel, commerce, community activities, and utility infrastructure.
OBJECTIVES	**H.1.a**	Maintain infrastructure.
	H.1.b	Improve deficiencies.
	H.1.c	Minimize congestion.
	H.1.d	Manage growth in vehicular travel demand.
	H.1.e	Increase safety.
POLICIES	**H.2.a**	Give priority to preserving and managing the transportation system. Follow regularly scheduled programs of pavement and bridge management to prevent highway structures from premature deterioration, resulting in safety hazards and the need for more frequent and costly full rehabilitation or replacement.
	H.2.b	Address deficiencies in the transportation system (safety, condition, capacity, sidewalks, etc.).
	H.2.c	Minimize recurring and non-recurring congestion through increased use of other travel modes, effective incident management and access management, and traffic flow improvements.
	H.2.d	Encourage alternatives to single-occupant auto travel, such as transit, carpools, vanpools, and bicycle and pedestrian travel to help reduce vehicle-miles of travel, conserve energy, improve air quality, benefit the environment in other ways, and support the economy.
	H.2.e	Consider expansion of capacity on key regional transportation facilities where it is shown to be cost-effective and justified by long term system benefits, and following evaluation of alternate modes and community impacts.
	H.2.f	Continue support of RIDOT's Incident Management Program and Transportation Management Center (TMC). Aggressively implement Intelligent Transportation Systems to all limited access highways and appropriate state routes. Encourage private sector participation in deployment of hardware. Evaluate the effectiveness of the TMC before any major expansion is approved.

HIGHWAY

STRATEGIES		
	H.3.a	Establish a regularly funded program to preserve the condition and safety of existing roads and bridges, drainage systems, and culverts, both state and local.
	H.3.b	Regularly maintain highway-safety features such as signing, guardrails, lighting, striping, and pavement markings; and pedestrian facilities such as signals and crosswalks.
	H.3.c	Replace the Sakonnet River Bridge, and complete Interstate 195 relocation (including the east-bound span of the Washington Bridge) as vital links in the Interstate and National Highway Systems.
	H.3.d	Continue to evaluate a full interchange at Route 4 / Interstate 95 and complete the Relocated Route 403 to support the full development of Quonset Davisville. Construct a new interchange subject to successful outcome of environmental and TIP processes.
	H.3.e	Provide necessary resources to strengthen enforcement of truck weight laws to reduce early deterioration of roads.
	H.3.f	Continue to utilize pavement and bridge management systems
	H.3.g	Continue RIDOT's bridge washing program to reduce bridge corrosion and maintain bridge life.
	H.3.h	Keep up with repair and scheduled replacement of facilities, vehicles, and equipment.
	H.3.i	Work with cities and towns to provide more visible signage (particularly at night) to identify major arterial routes. Signage identifying the main route is needed in addition to identification of major cross-streets.
	H.3.j	Create a statewide Access Management Program beginning with a pilot program, to be monitored through the Congestion Management Process.
	H.3.k	Work with private employers to provide incentive programs (parking cash-out credits) for public transit usage, bicycle usage, carpooling, and other alternatives to single occupancy vehicle usage. Encourage private sector and government participation in EPA's Commuter Choice Leadership Initiative and Best Workplaces for Commuters.
	H.3.l	Develop a program for state government, as a major employer leading by example, to encourage alternative modes. For example, the existing policy of providing free parking for state employees does not encourage transit use. Promote greater use of financial incentives, similar to those provided by the private sector. Develop a telecommuting policy as an option to reduce travel demand.
	H.3.m	Establish safe satellite parking lots in conjunction with shuttle services to promote transit to special events, tourist attractions, and downtown areas. Provide commuter parking in prime commuting corridors and areas.
	H.3.n	Integrate the State's Congestion Management and Air Quality planning process within the travel corridor planning process.

STRATEGIES (continued)

H.3.o	Give greater priority to implementing systems for the prioritization of traffic signals to reduce bus travel time in congested corridors.
H.3.p	Manage traffic incidents with the TMC's Incident Management Program.
H.3.q	Promote lower volume highways as alternatives to high-volume routes (for example, I-295 instead of I-95, US-1 instead of RI-138 in southern Rhode Island), for long-distance trips and when destinations are reasonably accessible from the circumferential route. Should the navy determine that Burma Road is excess to their needs, study its potential to relieve congestion on Routes 114 and 138 consistent with the West Side Management Plan prepared by the Aquidneck Island Planning Commission.
H.3.r	Improve traffic flow and safety, through motorist information systems; parking enforcement; well-managed highway construction; and projects such as synchronized signals, left-turn lanes and signals, and reconfiguration of intersections. Trucking, school buses, and tourism are particularly sensitive to severe traffic congestion.
H.3.s	Manage traffic incidents (such as breakdowns, accidents, and disruption due to special events) which are a major cause of travel delay. Both rapid response to emergencies and restoration of normal flow are essential.
H.3.t	Begin planning to address current and potential future congestion on the Interstate system by evaluating alternatives – including mode shift potential for passengers and freight, capacity expansion options, and ITS enhancements. Congested conditions already exist on I-295 between Routes 6 and 37 and this roadway may also benefit from short-term solutions such as truck climbing lanes. Future congestion is a concern for the two-lane segment of I-95 from RI-4 south to the CT border.
H.3.u	Consider the role of signage readability and placement for congestion alleviation.
H.3.v	Give the public better information on transportation. Include educational and promotional materials. Institute user-friendly communication technologies for the traveling public, such as the “511” program. Continue to improve web sites.
H.3.w	Mainstream the consideration of future ITS infrastructure needs in corridor studies and within the design phase of major reconstruction projects involving state arterials. Consider fiber optic cable conduit for all state roads when work is planned in TIP.
H.3.x	Reevaluate all aspects of parking. Consider changing policies that favor auto travel over alternative modes including provision of free or low cost parking by public entities, minimum parking space requirements for various activities, and tax treatment. Enforce handicapped parking regulations.
H.3.y	Consider modern roundabouts as a viable option in all intersection improvement projects.

HIGHWAY

PERFORMANCE MEASURES	**H.4.a**	Maintain the Interstate and National Highway Systems at "good" or better pavement condition. Maintain other systems at "fair" or better condition.
	H.4.b	Decrease percentage of NHS Bridge structural deficiencies from 21% to 15% in 2010 and 10% in 2020 and 5% in 2030.
	H.4.c	Mode split: Reduce percentage of "Drive Alone" to work from 80% in 2000 to 79% in 2010, 78% in 2020, and 77.1% in 2030. [US Census]
	H.4.d	Reduce incident clearance time on the interstate highways from an average of 40 minutes in 2008 to 38 minutes in 2010, 35 minutes in 2020, and 30 minutes in 2030.
	H.4.e	Interstate highway system should operate at posted speed limits 80% of each 24 hour period.
	H.4.f	Limit increase in travel time to work to 12% (25.2 minutes) between 2000 and 2010, 10% (27.7 minutes) between 2010 and 2020 and 8% (29.9 minutes) in 2030. [Travel time increased 17.2% between 1990 and 2000 to 19.2 minutes.]
	H.4.g	Reduce delay from 21 hours annually per person (in 2001) by 10% in 2015 and 20% in 2030.
	H.4.h	Vehicle Miles Traveled: Annual growth limited to 1.5% (2.0% is the current projected growth rate used in model).
	H.4.i	Refer to additional performance measures in the Safety section.

INTERMODAL

GOAL	**I**	Provide convenient intermodal facilities and services offering seamless connections for passengers and freight.
OBJECTIVES	**I.1.a**	Increase use of Park and Ride lots.
	I.1.b	Increase number of bicycles on buses.
	I.1.c	Maintain ferry service and accommodations for bicycles.
	I.1.d	Expand use of freight rail.
	I.1.e	Facilitate movement between modes.
POLICIES	**I.2.a**	Provide convenient and attractive intermodal connections for passengers between all modes, especially to encourage greater use of public transit and non-motorized transportation.
	I.2.b	Provide ample infrastructure for intermodal movement of freight to grow business and sustain residences at reasonable costs.
	I.2.c	Work with the private sector to improve intermodal connections.
	I.2.d	Improve coordination with the private sector in freight planning.

INTERMODAL

STRATEGIES	**I.3.a**	Create a shared vision for Kennedy Plaza (including Providence Station) as a major intermodal terminal to connect local bus service to intercity bus and rail, commuter rail, paratransit and taxi services, and pedestrian and bicycle routes.
	I.3.b	Continue existing commuter rail service to Providence through the Pilgrim Partnership. Extend Boston-Providence commuter rail service south in incremental steps to T.F. Green State Airport and Wickford Junction under a Phase I start-up service. Additional sites in Cranston, East Greenwich, Kingston, Pawtucket/Central Falls, Westerly, and West Davisville should be considered and evaluated based on demand, operations, infrastructure requirements, site availability, economic development opportunities, community support, and cost. Long term passenger rail opportunities may include Blackstone Valley and Aquidneck Island. Support extension of MBTA commuter service to Fall River. Use the FRIP track for passenger rail service.
	I.3.c	Consider additional "mini transit hubs" (similar to Pawtucket and Newport) at the Pastore Complex, Quonset Davisville, all state airports, and at other appropriate locations.
	I.3.d	Maintain and improve connections and amenities at existing terminals, including Point Street Landing, Block Island (Old and New Harbor) Newport Gateway, the Port of Galilee, Kingston Station, Westerly Station, and Woonsocket Depot.
	I.3.e	Maintain, improve, and expand network of Park and Ride lots. Add capacity to lots when they reach 80% usage.
	I.3.f	Utilize existing ferry docks and landings (Point Street, Waterplace Park, Galilee, Block Island, Newport Gateway, Fort Adams, Quonset Davisville, Bristol, Portsmouth, Prudence Island, East Greenwich) to their full potential and add new facilities as demand warrants in East Providence, Warwick (Rocky Point), and other Bay communities. Locate docking facilities for various water transportation modes in Newport. Accommodate high-speed ferry, other ferry services, cruise ship docking, harbor shuttles, and other tourist water services.
	I.3.g	Overcome regulatory barriers to providing RIPTA service to rail stations and Park and Ride lots in Attleboro and Franklin, MA, and Stonington, CT. Enhance RIPTA bus service to Rhode Island train stations.
	I.3.h	Promote bike/bus/train intermodal connections; for example, by marketing the availability of bike racks on RIPTA buses and by providing bicycle facilities at major intermodal centers.
	I.3.i	Work with Amtrak, private ferry service operators, and the travel industry to develop streamlined procedures for carrying bicycles on trains and ferries, and to provide integrated route and schedule information and reservation services oriented toward touring bicyclists.
	I.3.j	Promote the concept of “Complete Streets” in which roadways are designed to function as intermodal corridors for motorists, as well as pedestrians, bicyclists, and transit users. Features may include spaces for buses to pull of the road, wider sidewalks to accommodate transit shelters, ATIS, enhanced pedestrian features, and bike lanes.

INTERMODAL

STRATEGIES (continued)	**I.3.j**	Through RIPTA, provide information on all forms of transportation available to the public regardless of mode. Information should include how to access services, costs (if known), and where tickets may be purchased. Provide travel training and information to help passengers (e.g., elderly, disabled individuals) access and use the fixed-route system and other transportation services.
	I.3.k	Encourage private employers to provide shuttle service to intermodal facilities.
	I.3.l	Preserve sufficient acreage along freight rail lines and at key freight terminals (including Port of Providence, Quonset Davisville, T.F. Green, and Port of Galilee to accommodate intermodal transfers.
	I.3.m	Study improved access to the Port of Providence from the Interstate system and rail improvements within the terminal area.
	I.3.n	Coordinate and support efforts to consolidate baggage and passenger security screening for multi-modal trips where feasible.
	I.3.o	Integrate and pursue the recommendations from the following studies: Rail Corridor Study, Waterborne Passenger Transportation Study, Aquidneck Island West Side Transportation Guide Plan and Passenger Rail / Bike Path Study, RIPTA study on coordination of fixed-route and paratransit services, South County Commuter Rail Study, and Commercial Vehicle Parking Needs Study.
PERFORMANCE MEASURES	**I.4.a**	Increase use of Park and Ride lots from a system-wide average of 62% in 2007 by 3% per year. Note: Park and Ride lots are also used by individuals who are carpooling. They are not used strictly by bus passengers. 30% usage in 2002.
	I.4.b	Maintain 100% of bus fleet with bike racks.

LAND USE AND TRAVEL CORRIDORS

GOAL	**LU**	Continue to integrate land use and transportation planning using a travel corridor framework and promote responsible development practices in the public and private sectors.
OBJECTIVES	**LU.1.a**	Emphasize growth in existing or planned centers of development
	LU.1.b	Preserve open space, scenic corridors, and viewsheds
	LU.1.c	Preserve functionality of transportation corridors
	LU.1.d	Reserve land for transportation use
POLICIES	**LU.2.a**	Achieve more concentrated development patterns, emphasizing growth in existing urban places -- older cities and their downtowns, historic town centers, and other built-up areas. Promote higher housing densities and greater mix of land uses, within the limits of basic compatibility. Support and stimulate this development pattern with multi-modal transportation investments and other essential services.
	LU.2.b	Support the preservation of open space within transportation corridors to maintain the character of rural areas of the state, to protect critical resources, provide recreational opportunities, and enhance and reinvigorate urbanized areas.
	LU.2.c	Organize transportation planning in Rhode Island around a travel corridor framework. Encourage the state and cities and towns to work together to control land development along arterial highways so as to preserve their function, capacity, safety, and appearance. Coordinate land use and congestion management planning and strengthen the state's role in access management and corridor preservation through corridor plans developed in close cooperation with cities and towns.
	LU.2.d	Promote protection of property and rights of way to secure the long term transportation needs of the state.

LAND USE AND TRAVEL CORRIDORS

STRATEGIES		
	LU.3.a	Utilize appropriate transportation investments to implement the goals and policies of the state's land use and transportation plans which seek to concentrate growth within or adjoining existing built-up areas, avoid urban sprawl, reduce air and water pollution, and encourage greater use of transit and other alternative modes of transportation. Work with state agencies, cities and towns, private interests, and citizens to: • Target transportation system investments, and provide other incentives to encourage the concentration of growth within "growth centers" such as transit-oriented developments which have, or are planned to have, services and infrastructure necessary to support intensive development, and are planned for well-designed, higher density, mixed use, transit and pedestrian-friendly land uses; • Make it a priority to evaluate the effects of the existing property tax system on growth patterns and support revisions that will encourage growth and development within existing urban centers; • Provide leadership, incentives, and the information and technical training needed by communities to update the land use and transportation elements of their comprehensive plans and their land development, subdivision, and zoning regulations to attain more concentrated development patterns, where appropriate; and • Educate the public concerning the (transportation, environmental, energy-efficiency, service-cost savings, and other) benefits of more concentrated development, as compared to diffuse, low density "sprawl" patterns.
	LU.3.b	Achieve more concentrated development patterns including infill and mixed use development, and higher residential and employment densities near transit stops. It is desirable to have schools, libraries, parks, and other public services within walking distance of residential areas and town centers.
	LU.3.c	Work with affected communities to plan for and mitigate growth impacts accompanying expansion of commuter rail service to South County and Fall River. Investigate Transit Oriented Development and other land management strategies to accommodate growth.
	LU.3.d	Give special attention to assure that housing and social facilities are located in developed areas and designed to be accessible and friendly to pedestrians and transit. This issue is particularly important in the siting of housing for low income, elderly and/or disabled households.
	LU.3.e	Use State economic development programs and incentives to encourage major employers, particularly those which employ urban populations, to locate in transit-accessible, urban areas. Major developments should encourage the use of alternative transportation modes.
	LU.3.f	Encourage communities to adopt subdivision and land development regulations that provide flexibility in local street design to facilitate compact development patterns and minimize the land area devoted to roadways and parking. Advance municipal understanding of and reliance upon technical guidance available from the American Planning Association, Center for Watershed Protection, and other national sources aimed at the integration of modern model standards requiring compact development into local development codes.

LAND USE AND TRAVEL CORRIDORS

STRATEGIES (continued)		
	LU.3.h	Support the preservation of open space and rural character, and the creation of greenways called for in the state's Greenspace and Greenways Plan, and in local comprehensive plans. Encourage pursuit of open space priorities of regional and watershed greenspace plans via incorporation of appropriate strategies in municipal comprehensive plans and other local actions. Preserve agricultural land through various zoning techniques and property acquisition. Continue the partnership among federal, state, local and private agencies and groups to provide funding for open space preservation and greenway creation as mitigation for transportation project impacts.
	LU.3.i	Work with cities and towns on their comprehensive plans and their land development, subdivision, and zoning regulations to support the preservation of open space and rural character, and promote the creation of greenways.
	LU.3.j	Maintain vegetated buffers along Interstate Corridors, especially in rural areas.
	LU.3.k	Organize transportation planning in Rhode Island around a travel corridor planning approach. Work with regional planning commissions, municipalities, and the URITC to ensure that local comprehensive plans incorporate, and become consistent with, recommendations of the corridor plan(s). Corridor planning will enable transportation planning to go beyond the municipal boundaries.
	LU.3.l	Continue the scenic roadways program. Work with communities to adopt land management requirements that preserve the character and scenic resources within the corridors of designated scenic roads.
	LU.3.m	Recognizing that transportation and land uses are intrinsically intertwined so that one cannot be planned for properly without the other, undertake as part of transportation corridor planning coordinated, cooperative, and proactive land use/land management planning effort by the State and city and towns located in transportation corridors.
	LU.3.n	Encourage communities to exert more control over development along arterials; for example, by combining access points where possible and eliminating duplicate curb cuts. Encourage circulation between adjacent commercial areas, especially large developments, that allow direct access between properties. Provide for model zoning to allow more home-based occupations. Other Access Management techniques include signal and driveway spacing, frontage roads, and access from rear or side streets.
	LU.3.o	Require developers to pay for highway improvements where increased traffic from new development degrades traffic flow or intersection level of service. Consider adopting legislation similar to Massachusetts.
	LU.3.p	Preserve state-owned land located within and adjacent to roadway ROW's for use as vegetated buffers (with multiple benefits), future roadway improvements, and to preserve the functionality of the corridor.
	LU.3.q	Acquire and preserve active and abandoned rail rights-of-way for future transportation use. These include the East Junction, Warwick Industrial (Cranston), and the Providence and Worcester main line if passenger rail is feasible in the Blackstone Valley. They can have multiple uses over the long term.

LAND USE AND TRAVEL CORRIDORS

STRATEGIES (continued)	**LU.3.r**	Reserve vacant industrial land along freight rail lines for rail dependent uses. Reserve sufficient land for future terminals and intermodal facilities. Reserve waterfront land at the state's ports to meet future shipping and passenger transportation needs.
	LU.3.s	Reserve airport land for aviation related development and/or expansion as identified in the State Airport System Plan. Avoid incompatible development around the airport that will constrain or hinder aviation. Communities located within close proximity to a state airport must adopt Airport Overlay Zoning provisions to ensure future compatibility.
	LU.3.t	Preserve historically-significant transportation structures such as rail stations.
PERFORMANCE MEASURES	**LU.4.a**	Urbanized area (as defined by US Census) to increase no more than the rate of population growth.
	LU.4.b	Complete one corridor study per year.

PEDESTRIAN

GOAL	**PE**	Create and maintain safe and attractive walkable communities to encourage more walking trips, enhance transit usage, improve public health, and reduce auto congestion and dependency.
OBJECTIVES	**PE.1.a**	Improve walking environment.
	PE.1.b	Increase walking mode share.
POLICIES	**PE.2.a**	Elevate pedestrian transportation to a priority level. Every trip involves walking, making it the most pervasive form of transportation. According equal status to pedestrian transportation will require a fundamental change in the way state and local agencies do business. This will not be a quick change, but rather, an evolutionary process.
	PE.2.b	Ensure that all pedestrian facilities accommodate the needs of the physically challenged.
	PE.2.c	Recognize pedestrian planning considerations as a priority to be fully integrated in all transportation and land use planning processes.

PEDESTRIAN

STRATEGIES		
	PE.3.a	Dedicate at least $1 million in TIP resources annually to sidewalk construction and rehabilitation, and develop a prioritization system for sidewalk projects to improve walkability. Effectively utilize Safe Routes To School funding for projects in communities that improve safety and increase the number of children walking.
	PE.3.b	Encourage municipalities to address pedestrian needs through their comprehensive plans with an inventory of their walking infrastructure and prioritized list of new projects. Encourage communities to provide local matching funds for sidewalk projects.
	PE.3.c	Use the travel corridor process, and other channels to provide input on local and regional planning issues and initiatives to improve walking facilities. Offer technical assistance to cities and towns and other groups on detailed planning and design standards to effectively integrate pedestrian considerations into the development process.
	PE.3.d	Ensure that transportation facility design, construction, operational and maintenance procedures respond to pedestrian travel needs and promote community walkability wherever possible, by the following steps: •Examine existing pedestrian facilities to determine that they meet current minimum standards. •Assess signal pedestrian cycles in light of the aging population to provide adequate timing for safe crossing. •Employ traffic calming strategies where warranted to enhance pedestrian safety. •Increase the width of existing sidewalks or relocate obstructions where obstructions reduce walking space, and reduce street pavement width where possible to reduce crossing length (neck-down).
	PE.3.e	Encourage communities to promote walkability through their zoning and land development ordinances by zoning for a pedestrian scale of development, by including requirements and/or incentives for linking new development to adjoining developments via sidewalks or pathways and transit stops (as applicable), and limiting/reducing the number of driveways along a roadway to improve pedestrian safety.
	PE.3.f	Provide sidewalks within school areas and address pedestrian safety concerns. Encourage city and town planning and public works departments to initiate school trip safety committees as part of, or independently of the Safe Routes To School Program. Utilize Department of Education guidelines in selecting sites for new schools and in choosing to retain schools that are within walking distance to the school population.
	PE.3.g	Continue to improve pedestrian crash data reporting including modifications to make the reporting form more suitable to computerized information systems. Develop a system for ongoing data reporting and distribution.
	PE.3.h	Encourage private sector developments (particularly where public funding participation is sought) to provide safe, accessible and convenient walking facilities to better accommodate pedestrians in highway-oriented commercial development.

PEDESTRIAN

STRATEGIES (continued)	**PE.3.i**	Cooperate with public health and education agencies to develop and disseminate information encouraging the public to walk more for transportation and recreation. Information to be provided should include: maps and signs showing the best walking routes to major destinations; traffic safety education, including pedestrian and bicycle safety principles and practices, for school-aged children, and information directed at parents on specific traffic risks children are subject to and steps to increase their safety.
	PE.3.j	Integrate bicycling and walking options into new development and redevelopment.
	PE.3.k	Give greater priority to traffic-calming and pedestrian features (such as street furniture) in community planning and development.
	PE.3.l	Ensure that state highway projects enhance opportunities for walking and bicycling wherever possible.
	PE.3.m	Target pedestrian and bicycling improvements in neighborhoods with significant low income and minority populations.
	PE.3.n	Include sidewalks in both directions and appropriate street crossing facilities for bus stop shelters.
	PE.3.o	Convert the west end of the old Jamestown Bridge to pedestrian and fishing use, or provide equivalent facilities elsewhere.
	PE.3.p	Modify existing sidewalks to achieve ADA compliance, especially along transit corridors.
PERFORMANCE MEASURES	**PE.4.a**	Construct 2 miles of sidewalk per year; rehabilitate 20 miles of sidewalk per year; install 500 wheelchair ramps per year (through the Transportation Improvement Program).
	PE.4.b	Mode split (as defined by US Census Journey to Work) Increase “Walk or Work at Home” from 6.1% in 2000 to 6.4% in 2010, 6.6% in 2020, and 6.9% in 2030.
	PE.4.c	Increase number of children walking to school in SRTS funded communities. Set target when baseline data becomes available.

PLANNING

GOAL	**PL**	Conduct a comprehensive, cooperative and continuing planning process that responds to public interests and concerns, strives to meet the needs of underserved communities, and fosters productive relationships with elected and appointed officials from all levels of government and the private sector.
OBJECTIVES	**PL.1.a**	Maintain federally certified transportation planning process.
	PL.1.b	Ensure that community comprehensive plans are consistent with the Transportation Plan and other State Guide Plan elements.
POLICIES	**PL.2.a**	Participate as necessary at the federal level in policy development and authorization legislation, and maintain good relationships with federal agency staff and Congressional delegation.
	PL.2.b	Continue integrating a regional perspective into the planning process for all aspects of the state's development across both functional and jurisdictional lines. Obtain a high level of official commitment to, and a high degree of public participation in, this process. Maintain contact with counterparts at various regional levels (North Atlantic, Northeast, New England, I-95 Corridor), especially through professional associations. Support efforts to establish a regional transportation authority.
	PL.2.c	Support state planning efforts and maintain good working relationships with sister state agencies, quasi-public entities, higher education, and the General Assembly.
	PL.2.d	Improve and expand corridor level planning to ensure connections to land use planning and congestion management as well as coordination among local jurisdictions, regional planning agencies, neighboring MPO's and transit authorities.
	PL.2.e	Continue to work with cities, towns, and the Narragansett Indian Tribe, on their comprehensive plans; land development, subdivision, and zoning regulations; and design standards and guidelines to ensure consistency with and implementation of state policies and plans.
	PL.2.f	Support inclusive transportation planning and resource allocation processes that are accessible to, understood by, and constructively engage all population groups and interests in defining and addressing transportation needs.
	PL.2.g	Actively engage the private sector, interest groups, non-profits, and transportation providers in the planning process.
	PL.2.h	Periodically monitor plans and transportation system performance to assess progress made and identify deficiencies.

STRATEGIES		
	PL.3.a	Work through Rhode Island's congressional delegation and professional associations (APA, NARC, AMPO, AASHTO) to participate in national policy deliberations regarding transportation.
	PL.3.b	Continue addressing regional transportation issues, including high-speed rail, bus/rail/air connections, intercity bus, interstate transit/paratransit connections, and commuter rail service to Boston as well as to Connecticut locations. Support a "North-South Rail Link" in Boston to improve regional passenger rail connections. Work directly with other states to coordinate regional changes in freight/passenger rail service. Support bridge clearance projects in other states that open up new markets for freight rail.
	PL.3.c	Integrate Rhode Island's transportation planning into the interstate regional transportation systems of New England and the northeastern United States, especially through the I-95 Corridor Coalition and other regional associations.
	PL.3.d	Provide adequate staffing and training in the transportation section of the Statewide Planning Program to conduct the federally mandated planning process.
	PL.3.e	Maintain planning tools, such as RI Geographic Information Systems, and the travel demand model with latest software applications and data. Share data among RIPTA, RIDOT, the Statewide Planning Program, and others.
	PL.3.f	Continue staff support to the State Planning Council, the Technical Committee, the Transportation Advisory Committee, and the Growth Planning Council. Participate on other committees (such as ITS, Accessible Transportation, T2, etc.) as necessary and as resources allow.
	PL.3.g	Compress the time between planning and implementation of transportation projects, so they are completed when needed and perform proactive, not just reactive, functions. Institute procedures to streamline the review process as projects go forward to design and construction.
	PL.3.h	Coordinate transportation planning with other Metropolitan Planning Organizations (MPO's) and regional planning entities such as the Aquidneck Island Planning Commission, Blackstone Valley Corridor Commission, and Washington County Planning Commission.
	PL.3.i	Enhance corridor planning efforts with scenario development and alternatives analysis using RI Geographic Information System (RIGIS) and the state travel model.
	PL.3.j	Work with municipalities to insure that local comprehensive plans incorporate, and become consistent with, the recommendations of the Corridor plan(s) for which they are a component. Corridor planning will enable transportation planning to go beyond the municipal boundaries.
	PL.3.k	Provide assistance to regional planning agencies, communities, and non-profits in the form of pass-through funding to enable their participation in cooperative planning efforts and corridor planning studies.

PLANNING

STRATEGIES (continued)	**PL.3.l**	Maintain current standards and guidance for comprehensive plans to ensure that all pertinent elements and modes of the transportation system are addressed and that municipalities are planning a balanced transportation system.
	PL.3.m	Support the University of Rhode Island Transportation Center (URITC) and the Technology Transfer Center efforts in disseminating information to local public works departments.
	PL.3.n	Continue to evaluate and improve the transportation planning processes' outreach measures to attain greater inclusiveness and accessibility for all population groups and interests.
	PL.3.o	Educate local planning boards and the public concerning the benefits of more concentrated development, as compared to diffuse, low density "sprawl" patterns (transportation, environmental, energy-efficiency, service-cost savings, and other).
	PL.3.p	Begin discussions and implement a pilot project to integrate education-based transportation programs with public systems to provide for more efficient and effective use of existing resources.
	PL.3.q	Institute outreach guidelines and processes to involve all Rhode Islanders (urban, suburban, rural) in the transportation planning process, giving particular emphasis to measures needed to engage lower-income residents, recent immigrants, and minority groups.
	PL.3.r	Provide updated guidance to cities and towns on circulation elements of local comprehensive plans.
	PL.3.s	Work with cities and towns to ensure that local transportation planning and project development reflect community needs.
	PL.3.t	Provide staff training in air quality, finance, modeling, context sensitive design, scenario planning, and other current planning topics.
	PL.3.u	Assess progress on performance measures and strategies as part of quadrennial updates of the Transportation Plan.
	PL.3.v	Obtain best available digital elevation data on sea-level rise and assess impact to state and local transportation infrastructure.
	PL.3.w	Promote public education about about environmental and economic benefits of transit as well as "travel training" that teaches people how to use the bus system.
PERFORMANCE MEASURES	**PL.4.a**	Pass certification review by federal funding agencies in 2009. (Extent of SAFETEA-LU).
	PL.4.b	All cities and towns have state approved comprehensive plans by 2009.

SAFETY

GOAL	**S**	Improve the safety of all transportation modes through education, enforcement, and engineering solutions.
OBJECTIVES	**S.1.a**	Reduce fatalities and serious injuries
	S.1.b	Reduce crashes
	S.1.c	Reduce bicycle and pedestrian injuries
	S.1.d	Increase seatbelt and motorcycle helmet use
POLICIES	**S.2.a**	Support educational efforts directed toward all population groups regarding safe use of all modes of transportation.
	S.2.b	Strengthen safety laws and programs and improve enforcement, including more stringent driver training, licensing, and re-licensing; seat belt and motorcycle helmet requirements; and drunk driving penalties.
	S.2.c	Improve the operating characteristics of the transportation system through safety improvements to the right of way including pavement, signage, signalization, lighting, sight distances, sidewalks, traffic calming, access management, etc.
	S.2.d	Improve crash reporting system and data analysis.
	S.2.e	Integrate safety considerations into all transportation planning documents.

STRATEGIES (continued)

S.3.a	Improve the safety of all drivers and passengers through driver education, alcohol awareness, and other safety education programs.
S.3.b	Increase the safety of children in motor vehicles through education programs, and public awareness programs including alcohol awareness, the Department of Health's child safety seat checkups, and distribution of child safety seats.
S.3.c	Expand pedestrian, pedacycle and motorcycle safety educational efforts for all transportation system users.
S.3.d	Continue to implement Safe Routes to Schools programs through infrastructure and non-infrastructure (education, encouragement, and enforcement) projects.
S.3.e	Improve the safety of motorists, pedalcyclists, and pedestrians when operating/walking within the vicinity of trucks and buses through "share the road" education including commercial motor vehicle limitations and safe driving practices.
S.3.f	Institute higher standards for driver licensing and license renewals, including graduated license for younger drivers. Consider reverse graduated licenses for older drivers.
S.3.g	Strengthen safety laws and programs including stricter enforcement and penalties for unsafe vehicles, drunk driving, speeding and aggressive driving.
S.3.h	Support the passage of a Rhode Island primary seatbelt law and increase seatbelt usage through public education and awareness programs such as "Click It or Ticket."
S.3.i	Support the passage of a Rhode Island motorcycle helmet law and increase helmet usage through public education programs.
S.3.j	Provide continuing in-service training to law enforcement personnel on changes in traffic laws, including laws pertaining to pedestrian and pedalcycle safety.
S.3.k	Encourage communities to adopt and enforce snow removal ordinances to improve conditions of pedestrian and non-motorized travel.
S.3.l	Improve transit rider safety both on and off of buses in order to maintain an atmosphere that ensures customer safety during all phases of transit operations. RIPTA should enforce control policies including removal of unruly passengers when appropriate.
S.3.m	Improve highway lighting on high-volume roads and interchanges by using "full cut-off" fixtures and reduced glare lights. Design highway lighting systems and facilities to consider the needs of Rhode Island's aging population, and minimize environmental and aesthetic impacts on surrounding areas. Improve the safety of transit users, pedestrians and pedalcyclists in urban areas by providing and maintaining appropriate lighting.
S.3.n	Improve crossing safety at, or eliminate, rail-highway grade crossings**.**

STRATEGIES (continued)

S.3.o	Improve the safety of highway travel through the use of improved lane markings and highway edge marking including wider markings, retroreflective permanent raised pavement lane and edge markings, edge grooving, and retroreflective signage.
S.3.p	Improve the safety of roadsides through the use of clear zones, relocation of sign supports and traffic control devices, and use of breakaway sign, utility and light supports consistent with the character of the roadway.
S.3.q	Provide and maintain crosswalks, sidewalks, crossing signals, well defined pedalcycle lanes, and separate off-road trails to improve pedestrian and pedalcycle safety.
S.3.r	Continue to improve emergency response time to, the clearing of, and driver notification of, highway accidents in order to minimize traffic delays and secondary crashes.
S.3.s	Develop information on the problems senior adults face as pedestrians and drivers, and formulate strategies to improve their personal safety and mobility. Utilize design treatments (signage and lighting in particular) that make driving safer and more comfortable.
S.3.t	Follow best management practices to reduce red light running and improve safety at signal controlled intersections including LED lenses, black backplates, appropriate number and placement of signal heads, adequate warning for traffic lights, improved signal timing, coordinated signal systems, and removing unnecessary traffic signals.
S.3.u	Improve driver information through the use of standard signs and lettering, retroreflective signs, and a replacement program for worn, damaged or missing signs. Signs should comply with Manual for Uniform Traffic Control Devices (MUTCD).
S.3.v	Improve worker safety and driver information and safety through the proper use of MUTCD standards in the setting up and operating of work zones and efficient use of law enforcement personnel.
S.3.w	Continue to expand and improve the crash reporting system by: •Using crash and traffic data to identify high-hazard intersections and corridors with the highest occurrences and rate of vehicular and pedestrian or pedalcycle crashes. •Investigating the expansion of the “Other” category in reporting the cause of collisions with non-motor vehicles. •Investigating the inclusion of collisions with pedestrians and pedalcycles in the reporting of collisions with non-motor vehicles.
S.3.x	Employ in appropriate settings traffic calming techniques such as narrowed lanes, speed tables, raised crosswalks, traffic roundabouts, and chicanes to reduce speed and enhance safety.
S.3.y	Improve highway operations and safety through the use of Road Safety Audits (RSA) conducted by independent, multi-disciplinary teams.

SAFETY

PERFORMANCE MEASURES		
	S.4.a	Reduce crash rate per 100 million Vehicle Miles Traveled (VMT) from 588 in 2001 to 470 in 2015, 400 in 2025 and 375 in 2030. [Note: Data collected by RI Department of Transportation (RIDOT).]
	S.4.b	Reduce crash rate per 10,000 licensed drivers aged 75 and over from 60 in 2001 to 54 in 2015, 49 in 2025, and 47 in 2030. [Note: Data collected by RIDOT.]
	S.4.c	Reduce number of fatalities (based on a 3 year average) from 81 in 2001 to 72 in 2015, 66 in 2025, and 63 in 2030. [Note: Data collected by RIDOT. Target is consistent with RI Department of Health (RIDOH) goal for 2010 and extrapolated to 2015.]
	S.4.d	Reduce fatality rate per 100 million Vehicle Miles Traveled (VMT) from 0.90 in 2001 to 0.79 in 2015, 0.65 in 2025, and 0.60 in 2030. [Note: Data collected by RIDOT. National rate for 2002 is 1.50.]
	S.4.e	Reduce number of alcohol related fatalities from 48 in 2001 to 35 in 2015, 26 in 2025, and 21 in 2030. [Note: Data collected by National Highway Traffic Safety Administration (NHTSA).]
	S.4.f	Reduce alcohol related fatality rate per 100 million VMT from 0.60 in 2001 to 0.48 in 2015, 0.40 in 2025, and 0.38 in 2030. [Note: Data collected by NHTSA. National rate for 2002 is 0.61]
	S.f.g	Reduce number of crashes involving commercial vehicles from 328 in 2003 to 297 in 2015, 266 in 2025, and 250 in 2030. [Note: Data collected by Federal Motor Carrier Safety Administration (FMCSA).]
	S.4.h	Reduce the number of serious pedestrian injuries from 94 in 2001 to 88 in 2015, 83 in 2025, and 80 in 2030. [Note: "Serious" is defined as admitted to hospital. Data collected by RIDOH.]
	S.4.i	Reduce the number of serious bicycle injuries from 80 in 2001 to 75 in 2015, 71 in 2025 and 69 in 2030. [Note: "Serious" is defined as admitted to hospital. Data collected by RIDOH.]
	S.4.j	Increase seatbelt use from 74% in 2003 to 85% in 2015, 92% in 2025, and 94% in 2030. [Note: Data collected by RIDOT. Based on passage of RI Primary Seatbelt Law.]
	S.4.k	Increase motorcycle helmet use to 98% in 2015 and beyond. Current data not available. [Note: Based on passage of RI Motorcycle Helmet Law.]

TRANSIT

GOAL	**T**	Provide a safe, robust, and convenient network of transit and shared ride services with seamless intermodal connections in support of increased employment opportunities, improved environmental quality, and reduced congestion and auto dependency.
OBJECTIVES	**T.1.a**	Increase transit ridership.
	T.1.b	Increase carpooling and vanpooling.
	T.1.c	Maintain transit vehicles, equipment, and facilities.
POLICIES	**T.2.a**	Improve the present overall level of RIPTA Service. RIPTA is a public investment that is crucial to the economy, contributes to the fabric and strength of urban areas, provides a means of transportation for people who can not or choose not to drive (whether commuters, shoppers, low-income, elderly, students, disabled, or others), improves the environment, and conserves energy.
	T.2.b	Continue existing commuter rail service to Providence through the Pilgrim Partnership. Extend Boston-Providence commuter rail service south in incremental steps to T.F. Green State Airport and Wickford Junction under a Phase I start-up service. Additional sites in Cranston, East Greenwich, Kingston, Pawtucket/Central Falls, Westerly, and West Davisville should be considered and evaluated based on demand, operations, infrastructure requirements, site availability, economic development opportunities, community support, and cost. Long term passenger rail opportunities may include Blackstone Valley and Aquidneck Island. Support extension of MBTA commuter service to Fall River. Use the FRIP track for passenger rail service.
	T.2.c	Study growth impacts of new rail service and work with affected cities and towns to implement growth management measures in concert with extension of rail service. This includes areas of RI along the northeast corridor as well communities impacted by rail service outside the state (such as New London, CT; Fall River, MA; and Franklin, MA)
	T.2.d	Maintain water transportation between Providence, Newport, and other Bay communities, and consider expansion to other activity centers as appropriate.
	T.2.e	Adjust transit operations to the changing needs of a dynamic population -- the increasing proportion of elderly people, the large number of people with limited capability in English, the requirements that welfare recipients find work, the increasing number of disabled people seeking to travel, the number of students on evening schedules and the prospects for a twelve-month school year, and the dispersed location of many critical facilities and services. Consider routes, time of service, and other operational characteristics in selecting equipment. This is particularly important for low-income individuals, transitional housing or shelter residents, and the homeless.
	T.2.f	Market transit services conscientiously and efficiently to all segments of the public as a convenient and reliable alternative to the automobile. Make the transit system and intermodal connections user-friendly for all members of the riding public.

POLICIES (continued)	**T.2.g**	Develop state policy on using the least-cost, most efficient mode of travel for state-funded programs (e.g., transit over paratransit with rates structured to give priority to transit usage, and service to the nearest service outlet). Provide that all agencies purchasing paratransit services contract with RIde and that social service agencies be located along transit routes.
	T.2.h	Coordinate all state and municipal-funded transportation services, and consolidate operations where feasible. This includes fixed-route, paratransit, school districts, Head Start, temporary employment agencies, and human service agencies outside of the RIde system. There should be no fare-free service unless supported by a third-party payee. RIPTA should be the custodian of the Coordinated Plan for Public Transit - Human Services (a plan required by SAFETEA-LU).
STRATEGIES	**T.3.a**	Give RIPTA the responsibility of "mobility manager" in Rhode Island. Include transit, paratransit, park-and-ride lots, vanpools, carpools, and other shared-ride alternatives as options to the single-occupant automobile. RIPTA could be the "one-stop shop" for information on intercity bus and rail, commuter rail, water transportation, and supporting bicycle and pedestrian modes for tourism and recreational travel. Pursue means to tie the various modes more closely, including shared ticketing and trip chaining opportunities. Develop a program for improving coordination of transportation alternatives to single occupancy vehicles. As the designated mobility manager for the state, RIPTA will be responsible for providing direction to this program.
	T.3.b	Maintain an up-to-date bus system map and schedules showing transfer points to connecting lines. Consider publishing an electronic commuter guide (similar to CommuterRegister.com in Connecticut). Research insurance obstacles to affordable vanpool programs.
	T.3.c	Focus on comfort, convenience, and reliability when improving transit. Implement service that reduces overall door-to-door travel time. Integrate scheduling, including centralized dispatch for real-time dispatching capability, through a PC-based Global Positioning System (GPS) program. Integrate vehicle location systems for both fixed-route and paratransit, to enable timely intermodal connections. Improve the flow of data from transmittal of manifests to carriers, to actual data on trips provided and transmitted back to RIde from billing and statistical purposes. Automated data collection should provide for less manual effort at the driver level. Automate all transactions, including fare collection, through an automated data collection system and a fare media reader system. Review and institute where feasible a cash-less fare collection system. Install automated stop announcements, passenger counters, and vehicle location systems on transit vehicles and integrate it with visual readouts. Enhance and expand the use of ITS in the Ride Program, and continually improve RIPTA's website.
	T.3.d	Provide fixed-route transit utilizing large buses in the urbanized areas of the state. For suburban areas, provide a mix of services including fixed routes, point deviation, demand-response, carpooling, vanpooling, etc. Private employers are encouraged to provide shuttle service to fixed route public transit.
	T.3.e	Improve the present overall level of RIPTA transit and demand response service and better integrate with fixed route service.
	T.3.f	Make public transit safe and convenient for all kinds of trips. Cleanliness, maintenance of lighting and signage, and graffiti removal are important in attracting and maintaining ridership.

STRATEGIES (continued)

T.3.g	Target specific travel markets for RIPTA's array of services. • Continue and expand U Pass Program to colleges and universities. • Provide reverse-commuting options, utilizing various methodologies and models to enable urban low-income workers to access employment in the suburbs, including Massachusetts and Connecticut residents who work in Rhode Island. • Integrate RIPTA and human service agencies efforts with an enhanced and expanded ITS Senior Mobility Program, while ensuring sensitivity to clients' specialized needs. • Integrate transportation of students with public transit to avoid duplication of service. Establish contracts between RIPTA and school districts to provide transit services to students, particularly at the high school level (similar to the arrangement in the City of Providence).
T.3.h	Continue to purchase buses that provide a balance between the need for efficient boardings, low cost of operation, and seating capacity to meet transit demand.
T.3.i	Install new on-board vehicle communications technologies in Rhode Island for visually impaired passengers.
T.3.j	Improve public transportation to and between suburban communities. Circumferential transit routes and routes facilitating reverse commuting are essential to serve employers who are located in the suburbs and inner-city, lower-income people who need jobs.
T.3.k	Provide alternative modes of transportation for short-distance, high- traffic situations, perhaps including water taxi, light rail, streetcars, tramways, and bus rapid transit. Private operators are encouraged to provide such service. Design alternative transportation options for short-distance, high-volume traffic areas, especially when congestion, cost, and other obstacles constrain movement. Examples include links for major passenger terminals to destinations/attractions (e.g., Newport, downtown Providence, tourist areas).
T.3.l	Continually seek to improve the "on-time" performance of the transit system. Require drivers to check-in at stops. Revise schedules if times between stops are impractical or unattainable as a result of traffic or increased use.
T.3.m	Work with towns in suburban and rural areas to expand demand response and flex route systems to improve access by poor, elderly, and mobility-impaired residents to jobs, medical facilities, and social services.
T.3.n	Expand mid-day, evening, and weekend hours of all regular RIPTA routes. Use of vans or trolleys may help offset costs of operating large buses during off-peak times.
T.3.o	Expand RIPTA's trolley service into additional Providence neighborhoods as funding permits.
T.3.p	Coordinate transit hours of service with social service agencies, medical facilities, major employers, and supermarkets/shopping centers. Consider offering flexible alternatives for residents using transit for activities such as grocery shopping. Similar to flex service in other communities, provide a van to pick up passengers after they have completed grocery shopping.

STRATEGIES (continued)		
	T.3.q	Provide multilingual (Spanish and predominant Southeast Asian languages) printed transit information on buses, and at bus stops and businesses along bus routes.
	T.3.r	Provide cultural sensitivity and customer service training for RIPTA drivers and other customer care personnel. Require drivers to announce stops and route information. Provide comments cards for RIPTA customer feedback.
	T.3.s	Assure that transit services consider the special needs of disabled and elderly customers and support the goal of independent living. Regularly inspect to insure the operability of lifts for handicapped accessibility on buses. Enforce restricted seating for elderly and handicapped riders.
	T.3.t	Strive to make transit use affordable for low-income residents. Advertise existing programs that benefit economically disadvantaged residents. Develop more convenient options for Rite Care recipients to access free bus passes. Consider a transportation fund to assist income- eligible individuals with the cost of bus passes.
	T.3.u	Establish a regular review schedule for existing bus routes, using performance measures. Eliminate or modify poorly performing routes.
	T.3.v	Review all transportation services available in the state and address duplication of efforts, including equipment. Services include: fixed-route transit, RIde paratransit services, other paratransit operations (including municipal), school buses (including special education), Head Start, day care, and recreational programs.
	T.3.w	Reevaluate all aspects of parking. Expand alternative means of transportation to colleges and universities. Reduce the availability of free and/or low-cost parking available on or near campuses.
	T.3.x	Keep up with repair and scheduled replacement of buses, maintenance vehicles, terminals, and other equipment and facilities. Make needed safety improvements, and maintain cleanliness and attractive appearance. Give special attention to maintenance of specialized equipment such as wheelchair lifts, bus shelters, and signage for detours and special events.
	T.3.y	Recognize that transit operators represent assets with capacity to expand. Use their underutilized capabilities; and simplify access for users by building expanded services on existing operators, rather than creating new organizations.
	T.3.z	Encourage communities to promote walkability through their zoning and land development ordinances by zoning for a pedestrian scale of development, by including requirements and/or incentives for linking new development to adjoining developments via sidewalks or pathways and transit stops (as applicable), and limiting/reducing the number of driveways along a roadway to improve pedestrian safety.

TRANSIT

PERFORMANCE MEASURES		
	T.4.a	Increase transit mode share of work trips from 2.5% in 2000 to 2.8% in 2010, 3.0% in 2020 and 3.2% in 2030. [US Census]
	T.4.b	Increase carpool mode share of work trips from 10.4% in 2000 to 10.6% in 2010, 10.9% in 2020, and 11.1% in 2030. [US Census]
	T.4.c	Increase bus ridership from 25.9 million in 2007 to 27 million in 2010, 29 million in 2020, and 31 million in 2030.
	T.4.d	Increase RIPTA's number of passengers per hour of fixed route service from 39.01 in 2007 to 40.5 in 2010. [Note: This was 34.1 in 2003 and may fluctuate with the provision of rural service.] Increase number of passengers per hour of Ride service from 2.2 to 2.8.
	T.4.e	Increase the Mean Distance Between Failure (MDBF) of RIPTA's fleet from 3539 miles in 2003 to 3800 in 2010.
	T.4.f	Maintain 100% ADA compliance for transit system.
	T.4.g	Begin commuter rail service in Warwick by 2012 and Wickford by 2012.

Appendix A to E

APPENDIX A – CONGESTION MANAGEMENT PROCESS

INTRODUCTION

Moving Ahead for Progress in the 21st Century or MAP 21 requires that the transportation planning process address congestion management through a process that provides for effective management and operation, based on a cooperatively developed and implemented metropolitan-wide strategy, of new and existing transportation facilities eligible for funding under this title and chapter 53 of title 49 through the use of travel demand reduction and operational management strategies. This Metropolitan Transportation Plan (the Plan) includes such strategies to improve the performance of the existing transportation facilities to relieve vehicular congestion and maximize safety and mobility for people and goods. In addition, the previous legislation, SAFETEA-LU, required the same process to address congestion management. These two provisions of federal law establish a clear and continuing directive to incorporate such strategies into the long-range planning for a region and to ensure ongoing dialogue to ensure that these strategies are carried out in a meaningful way.

CONGESTED FACILITIES

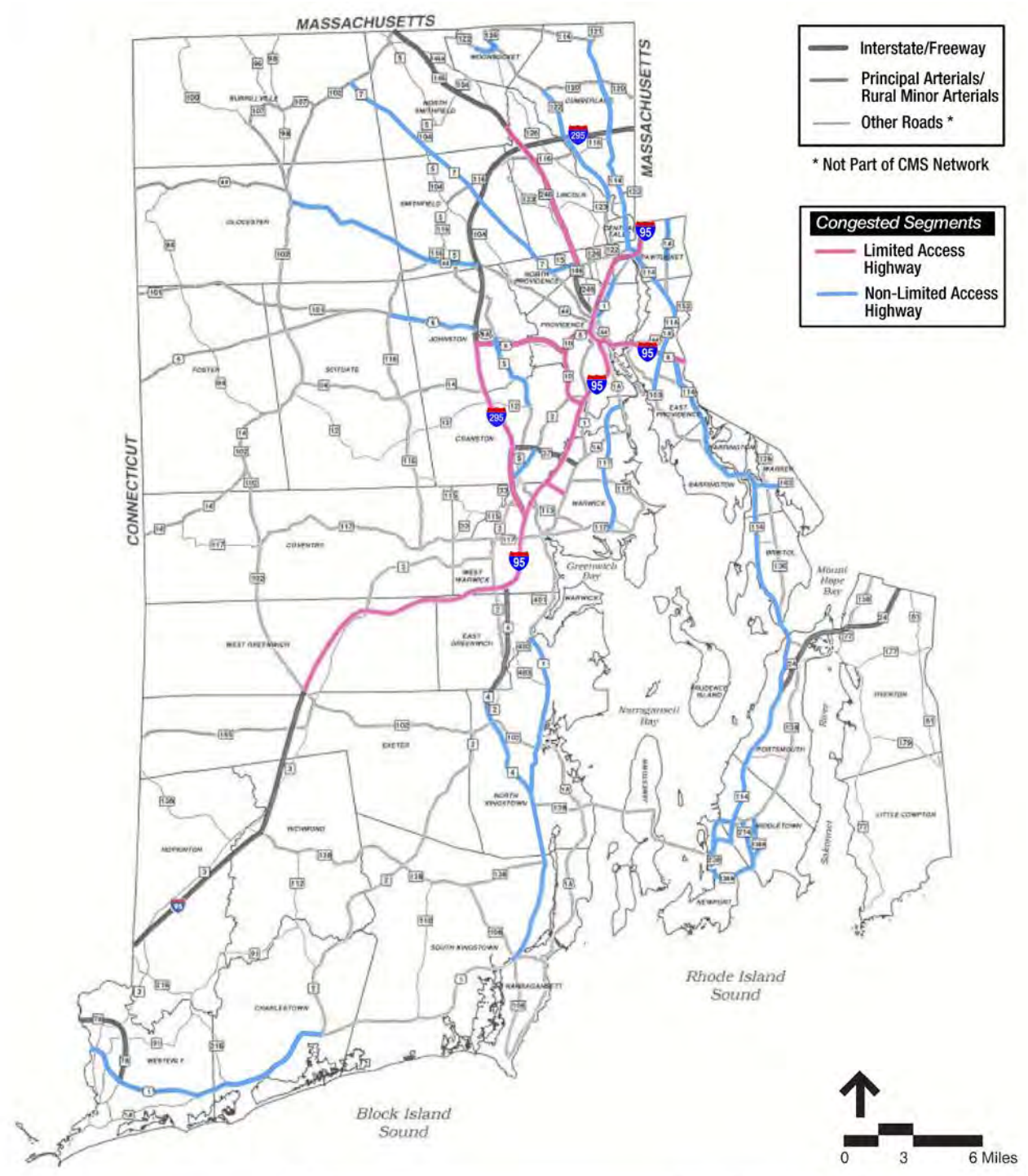
Rhode Island is the second most densely populated state in the nation and suffers from congestion as do most medium and large metropolitan areas. Until recently, planners have been concerned primarily with highway congestion; however, in the last couple years, certain public transit routes have become congested as well. Congested facilities are discussed briefly below.

CORRIDORS AND ROAD SEGMENTS

Along road segments, congestion is expressed as a volume to capacity ratio (v/c). The v/c ratio is a measure of a road's traffic, on a numerical scale, where a zero ratio equals no traffic and a ratio above 1.0 exceeds capacity. A v/c ratio above 0.8 is considered congested in the Rhode Island region. The region's travel demand forecasting model is used to evaluate the volume to capacity ratios for all road segments in the network in future years. The results of the effort are on the two maps below that show the state's highway system that are currently or expected to be congested through the year 2035.

- Congested Highways 2012
- Congested Highways 2035

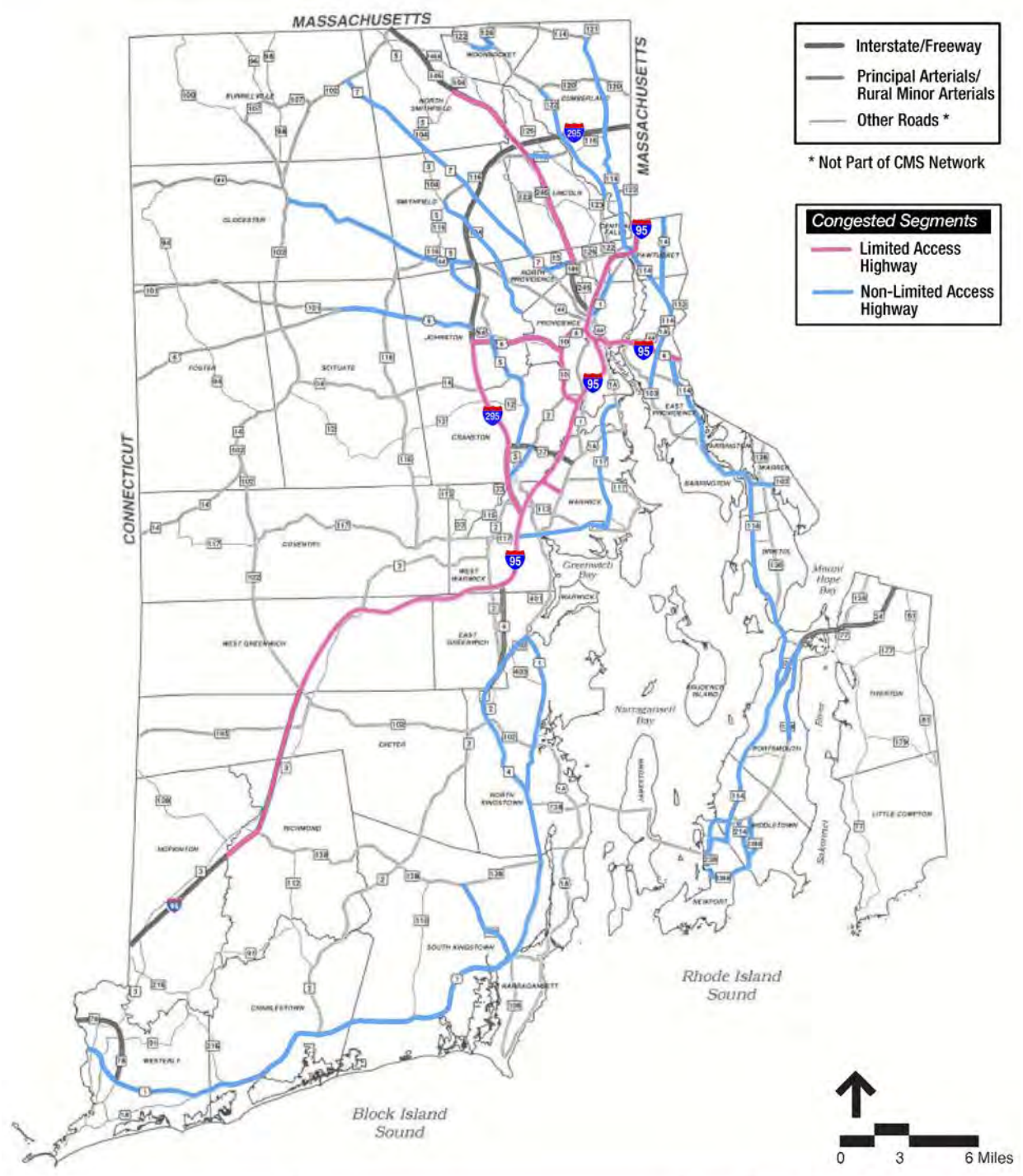
CONGESTED HIGHWAYS 2012



Peak Period Congestion
Based on 2012 TRANSCAD Model Run
For Speeds and V/C Ratios

Figure

CONGESTED HIGHWAYS 2035



Vanasse Hangen Brustlin, Inc.

Peak Period Congestion
Based on 2035 TRANSCAD Model Run
Without Interstate Capacity Expansion

Figure

PUBLIC TRANSIT BUS ROUTES

The Rhode Island Public Transit Authority (RIPTA) serves 34 of 39 of the State's cities and towns. As of September 2012 RIPTA operates 3,105 daily weekday trips on 54 statewide fixed bus routes 5 days a week. The following weekday transit routes are considered congested by RIPTA due to passengers being forced to stand and passengers being left behind to wait for the next bus, mostly during peak hours.

RIPTA's heaviest weekday routes in terms of ridership are:

- Route 11 Broad Street
- Route 60 Providence/Newport
- Route 31 Cranston Street
- Route 99 North Main Street / Pawtucket
- Route 56 Chalkstone Avenue

RIPTA operates 1,799 Saturday trips on 46 statewide fixed bus routes that serve 28 of the State's cities and towns. On Sundays, RIPTA operates 1,168 trips on 36 statewide fixed bus routes that serve 26 cities and towns.

PARK N' RIDE LOTS

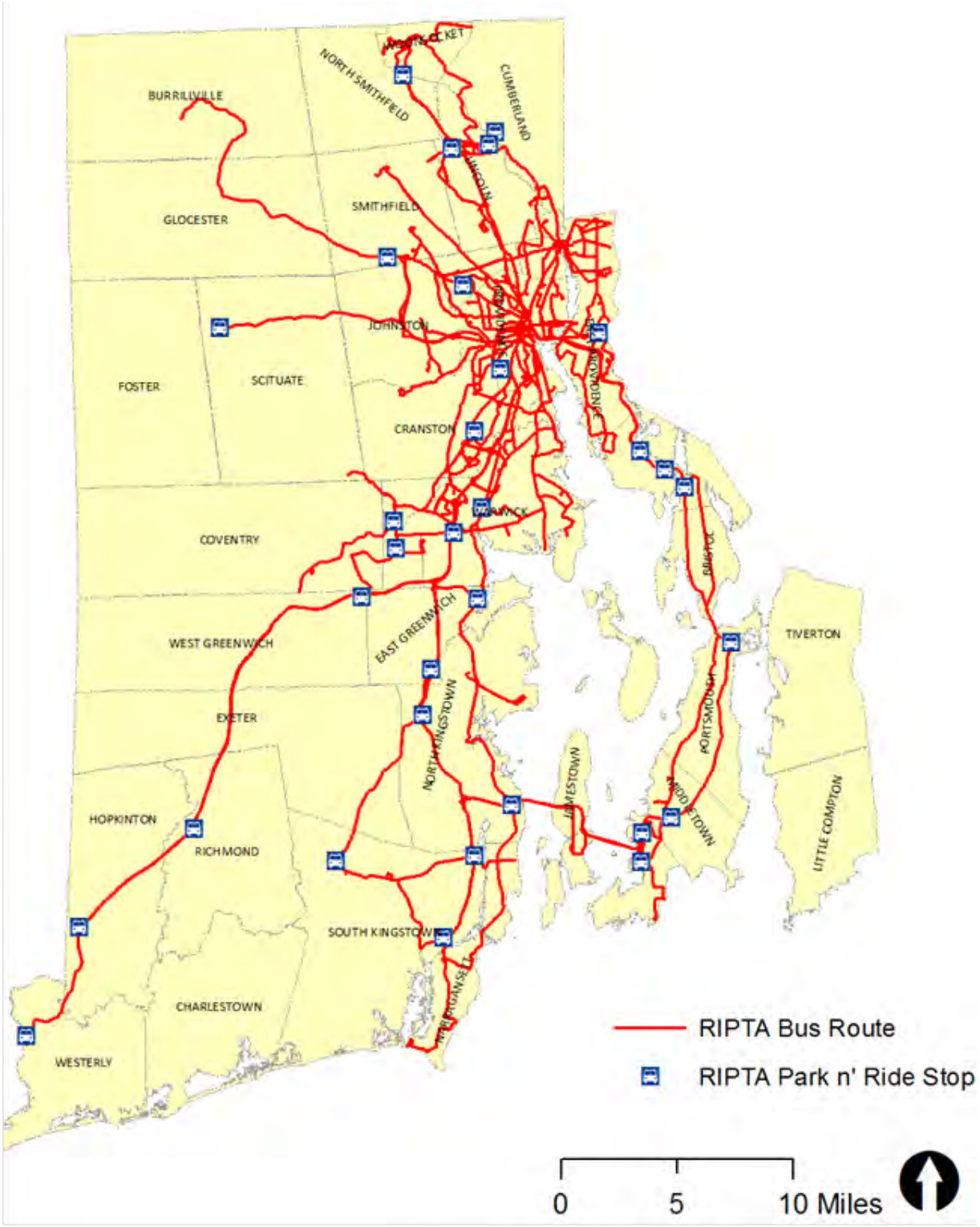
Parking facilities for commuters, such as park and ride lots along bus routes and parking lots for commuter rail, serve an important function in travel. Rhode Island has 28 park and ride lots (serving bus transit as well as carpooling and intercity bus service), some of which are monitored periodically for utilization. Conditions are considered congested at parking facilities where spaces in use exceed 85 percent (practical capacity) of the total number of spaces. Four of the lots are at or above 85 percent capacity (Congregational Church in Barrington, Routes 2 & 102 in North Kingstown, Lincoln Mall, and Routes 138 & US 1 in South Kingstown) as indicated in the table to the right and should be considered candidates for expansion. RIDOT Intermodal Planning and RIPTA are responsible for the siting and planning of new commuter park and ride locations. New sites are evaluated based on highway proximity, environmental constraints, right-of-way, and cost.

Rhode Island Park n' Ride Lots

Location	Municipality	Vehicle Capacity	Percent Use 2010
RIDOT Operated			
Congregational Church, County Road	Barrington	93	97%
Police Cove Park	Barrington	18	N/A
Frenchtown Road & Route 4	East Greenwich	79	
Routes 2 & 4	East Greenwich	65	83%
Route 44 (Taunton Avenue at MA State Line)	East Providence	76	30%
Route 3 & I-95 at Exit 1	Hopkinton	106	41%
Routes 138 & 1A	North Kingstown	150	27%
Routes 2 & 102	North Kingstown	89	94%
Grace & Pine Streets	Pawtucket	20	
Grace & George Streets	Pawtucket	21	57%
Boyds Lane & Route 24	Portsmouth	20	
Routes 138 & I-95 at Exit 3	Richmond	46	9%
Smithfield Commons, Routes 5 & 44	Smithfield	65	49%
Kingston Train Station, Route 138	South Kingstown	170	
Fish Road & Route 24	Tiverton	92	44%
Franklin Street	Warren	85	31%
Airport Road	Warwick	133	
Routes 117 & I-95 at Exit 10	Warwick	200	52%
Exit 7 & I-95	West Greenwich	107	60%
Hopkins Hill Road, Exit 6A & I-95	West Greenwich	126	
Westerly Train Station, Railroad Avenue & High Street	Westerly	N/A	N/A
RIPTA Operated			
Garden City at Midway Avenue/Post Office	Cranston	100	
Route 122, Chimney Hill Apartments	Cumberland	15	
Lincoln Mall, Route 116 & Route 146	Lincoln	33	85%
Newport Gateway Transportation & Visitors Center	Newport	N/A	
Routes 138 & US 1 at the Tower	South Kingstown	25	154%
Wakefield Mall, Tower Hill Road	South Kingstown	36	
Park Square, Park Avenue at Shelter	Woonsocket	40	N/A

Source: RIDOT & RIPTA 2010

RIPTA BUS ROUTES, SEPTEMBER 2012



COMMUTER RAIL LOTS

The Massachusetts Bay Area Transportation Authority (MBTA) conducts vehicle counts at their South Attleboro and Attleboro stations for the commuter rail lots that utilize the rail service to Boston. The latest count for daily vehicles was completed on June 22, 2010.

Station	Vehicle Count
South Attleboro	746
Attleboro	698

It is important to note that a majority of the vehicles parked at the South Attleboro commuter rail lot have Rhode Island registration plates. The MBTA did not account for vehicle registration plate state origin in their June 2010 survey. However in previous surveys, upwards of 90 percent of the vehicles parked at the South Attleboro commuter rail station contain Rhode Island registrations.

In an agreement with the MBTA, Rhode Island extended MBTA commuter rail service to/from Boston south of Providence to T.F. Green Airport in 2010. The service was further expanded south in 2012 to the Wickford Junction Station in North Kingstown. The daily vehicles in Rhode Island's commuter rail parking garages for passengers most likely utilizing the MBTA service consist of the following:

Station	Vehicle Count	Time
Providence Train Station	306	September 14, 2012 at 11:00 a.m.
Warwick Interlink	80	Daily Average for August 2012
Wickford Junction	70	Daily Average for July 2, 2012 to July 20, 2012

DEFINING CAUSES OF CONGESTION

RECURRING CONGESTION

Recurring congestion is fairly predictable and occurs primarily in the normal morning and late afternoon peak periods when the traffic volumes on the roads approach or exceed the design capacity of the highway. This is mostly associated with commutation to work; however, schools also generate many trips and commuting traffic is noticeably less when schools are not in session. Afternoon peak hour congestion is usually greater than morning peak hour because of the additional volume of non-work trips (medical, social, retail, etc.) Bus routes may also suffer from recurring congestion during peak hours. Another type of recurring congestion is seasonal tourist of traffic. Rhode Island has a robust tourist economy, and summer weekend traffic in Newport and near the beaches in South County can be very challenging.

Recurring congestion is monitored on Rhode Island interstate highways principally through the Traffic Management Center (TMC) and Traffic.com. An extensive Intelligent Transportation System (ITS) detects congestion and broadcasts traffic alerts to motorists using various means of communication.

NON-RECURRING CONGESTION

This type of congestion is event related – sometimes anticipated, sometimes not, but which is estimated by FHWA to be responsible for nearly half of traveler delays. Examples of event traffic that are anticipated include construction work zones, special events (conventions, festivals, etc), and some weather events (hurricanes, snow, and heavy rains). Unanticipated events may include crashes and certain types of weather (summer thunderstorms).

Rhode Island's Incident Management Task Force (IMTF) is a process that has been in place for several years to plan for, monitor, and de-brief from non-recurring congestion due to incidents. The RIDOT/TMC supports this Task Force, members of which include state and local police officers, E-911 staff, RIEMA staff and others. The goal is to clear incidents as quickly as possible and restore normal flow of traffic.

DATA

Sources of speed and volume data are now readily available from the TMC to reliably measure and quantify the travel conditions from day to day. These continuous data sets, along with *Traffic.com,* and other non-recurring congestion measures (number and duration of construction activities, the number of incidents such as breakdowns and accidents, and the average clearance time for incidents), these measures can give some insights to the extent of both recurring and non-recurring congestion. In 2011 RIDOT went live with real time travel times displayed on some of the Dynamic Message Signs (DMS) that are located at strategic geographic points on the interstate and major highways. The TMC collects travel times on over a dozen segments of I-95 in Rhode Island for both north and south bound traffic.

Travel times collected for I-95 southbound include:

From: Exit 30 (Middle Street, Pawtucket)
To: Exit 22 (Downtown Providence)
Exit 19 (I-195 EB) to Exit 13 (T.F. Green Airport)
Exit 9 (RT 4, North Kingstown)
Exit 5 (RT 102, West Greenwich)
Exit 1 (RT 3, Hopkinton)

From: Exit 26 (Lonsdale Ave, Pawtucket)
To: Exit 22 (Downtown Providence)
Exit 19 (I-195 EB)
Exit 13 (Airport)
Exit 9 (RT 4, North Kingstown)
Exit 5 (RT 102, West Greenwich)
Exit 1 (RT 3, Hopkinton)

From: Exit 22 (Memorial Blvd, Downtown Providence)
To: Exit 13 (Airport)
Exit 9 (RT 4, North Kingstown)
Exit 5 (RT 102, West Greenwich)
Exit 1 (RT 3, Hopkinton)

From: Exit 16 (RT 10, Cranston)
To: Exit 13 (Airport)
Exit 9 (RT 4, North Kingstown)
Exit 5 (RT 102, West Greenwich)
Exit 1 (RT 3, Hopkinton)

From: Exit 10 (RT 117, Warwick)
To: Exit 5 (RT 102, West Greenwich)
Exit 1 (RT 3, Hopkinton)

From: Exit 6 (RT 3, West Greenwich)
To: Exit 5 (RT 102, West Greenwich)
Exit 1 (RT 3, Hopkinton)

Travel times collected for I-95 northbound include:

From: Exit 1 (RT 3, Hopkinton)
To: Exit 8 (RT 2, West Warwick)
Exit 11 (I-295 NB)
Exit 13 (Airport)
Exit 19 (I-195 EB)
Exit 22 (Downtown Providence)
Exit 30 (Pawtucket)

From: Exit 8 (RT 2, West Warwick)
To: Exit 11 (I-295 NB)
Exit 13 (Airport)
Exit 19 (I-195 EB)
Exit 22 (Downtown Providence)
Exit 30 (Pawtucket)

From: Exit 10 (RT 117, Warwick)
To: Exit 19 (I-195 EB)
Exit 22 (Downtown Providence)
Exit 30 (Pawtucket)

From: Exit 16 (RT 10, Cranston)
To: Exit 19 (I-195 EB)
Exit 22 (Downtown Providence)
Exit 30 (Pawtucket)

From: Exit 22 (Memorial Blvd, Downtown Providence)
To: Exit 30 (Pawtucket)

PERFORMANCE MEASURES

In addition to the data collection efforts, the TMC's consultant Jacobs Engineering Inc. hired a subconsultant TrafInfo, Inc. to develop performance measures for the Interstate Highway System.

The measures include the following Travel Time Reliability Measures:

- Average Travel Time
- 95th Percentile Travel Time
- Planning Index
- Buffer Index
- Incident Clearance Time
- Crash Rate
- ITS Equipment Uptime

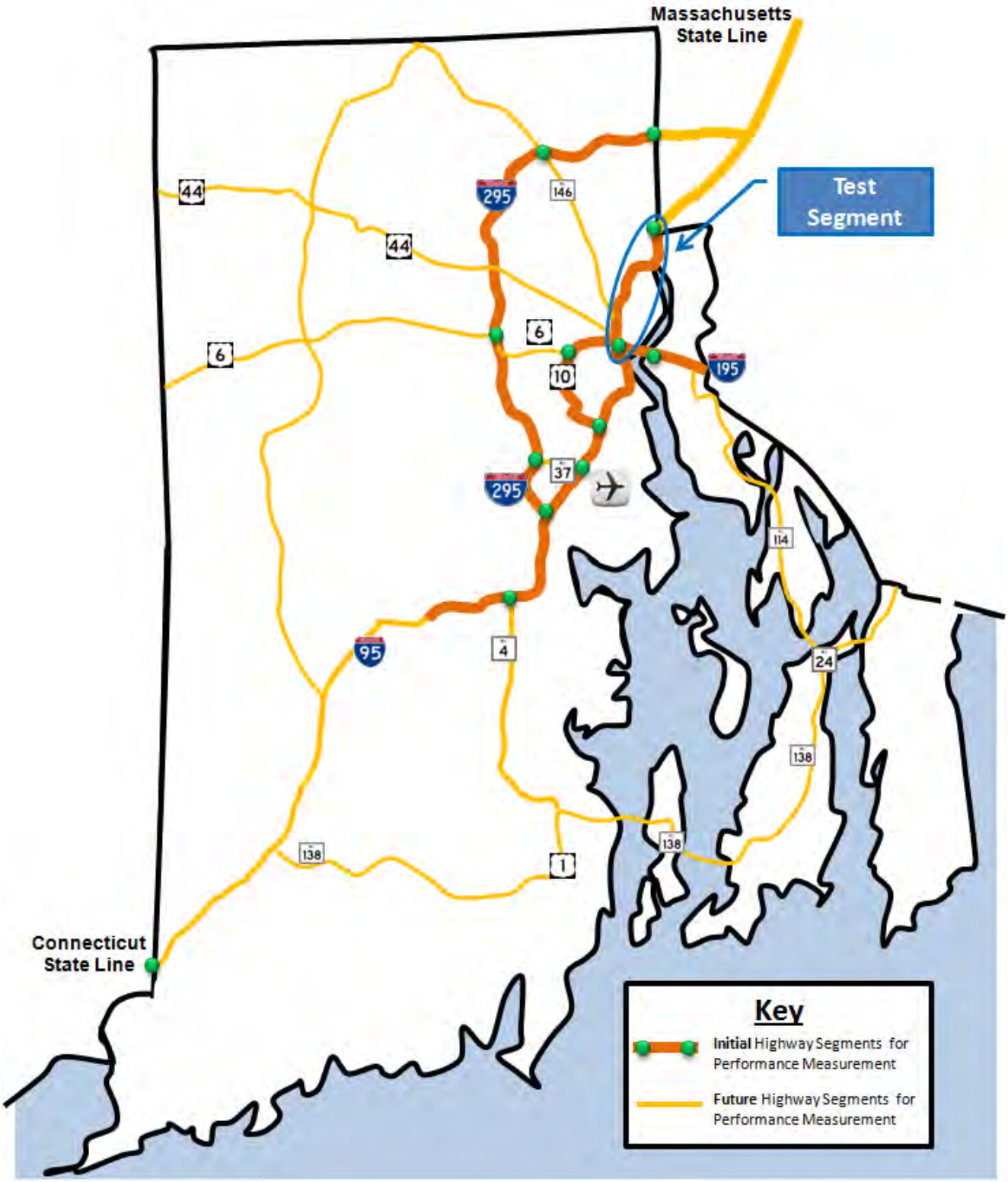
These performance measures were chosen by RIDOT with input from Statewide Planning. The selection criteria included:

1. Follow FHWA/AASHTO recommendations
2. Allow assessment of TMC functions
3. Help improve safety and traffic operations
4. Demonstrate the benefits derived from ITS
5. Data must be
   - Reliable
   - Consistent
   - Readily Available

- Ability to compute periodically

The Congestion Management Task Force will apply these performance measures to expand the significance and utility of the Congestion Management Process. The performance measures will be used to examine alternatives and to connect the CMP to long-term planning goals. The performance measures will also assist in identifying, analyzing, and evaluating the causes of congestion. The measures will assist RIDOT and the CMP in evaluating the effect of strategies implemented to improve safety and congestion.

PERFORMANCE MEASURES BASE MAP: HIGHWAY SEGMENTS, 2012



ESTABLISHING A PROCESS TO MANAGE CONGESTION

PURPOSE

A Congestion Management Process *identifies, analyzes, and evaluates* the causes of congestion within the major corridors of Rhode Island's roadways, and *evaluates the effect of implemented strategies* to improve these roadways.

CONGESTION MANAGEMENT TASK FORCE (CMTF)

The CMTF is the primary vehicle for the implementation of Rhode Island's Congestion Management Process (CMP). It combines resources currently used to monitor both recurring and non-recurring congestion, and supplements that with staff from RIPTA, Statewide Planning, and RIDOT's Maintenance and Design Divisions as partners and collaborators.

MEMBERSHIP

The Task Force is a multi-disciplinary group of federal, state, and local officials consisting of the following representatives, each with a particular area of expertise as noted in the table.

Congestion Management Task Force			
Agency	**Expertise**	**Expectations**	**Benefits**
RIDOT / TMC	Incident management Communication with responders. Communication with general public. Traffic data collection. ITS.	Co-chair and convene meetings. Report TMC data. Provide update on Incident Management Task Force.	TMC assumes proactive role in congestion relief and shows increased return on investment and greater value to the taxpayer.
Statewide Planning	Travel demand modeling Land use. Corridor planning. TDM strategies.	Co-chair meetings. Run TRANSCAD based travel demand model in response to request from CMTF.	Plan, TIP, and CMP connectivity and operational compatibility.
RIPTA	Transit operations (bus). Rideshare. Site design for bus accessibility.	Provide route and ridership information for Task Force in vicinity of projects, congested corridors.	Better information on future construction activities. Greater ridership.
RIDOT / Design	Design for access management, roundabouts, and intersection capacity enhancements. Traffic safety.	Present project design solutions. Supply relevant Physical Alteration Permit Applications for CMTF input.	Feedback loop on completed projects. Have improvements produced the desired results?
RIDOT / Intermodal Planning	Park n' Ride lot planning and monitoring Coordinate/liaison with RIPTA on RIDOT construction projects Serve on RIPTA Strategic Planning Committee Commuter Rail Program Manager TOD funding grants	Provide regular Park n' Ride lot data Provide commuter rail lot information and usage data	Minimize impacts on RIPTA service due to congestion. Siting of new or expanded Park n' Ride lots Expansion of commuter rail system
RIDOT /	Upcoming projects and activities	Provide specific days, dates,	Improved operational

Construction and Maintenance	requiring use of travel surface. Safe Work Zone requirements.	times, and location of lane and road closures.	performance and a better informed motoring public.
FHWA	Best practices. Federal requirements for CMP.	Contribute knowledge or case studies of other state/MPO efforts in CM.	Positive return on federal investments.
Local Government	Local area knowledge. Land use and zoning controls. Subdivision regulations.	Present results of local access management or corridor studies undertaken.	Feedback on plans and projects. Forum to reach state officials.

CMTF STRUCTURE AND FUNCTION

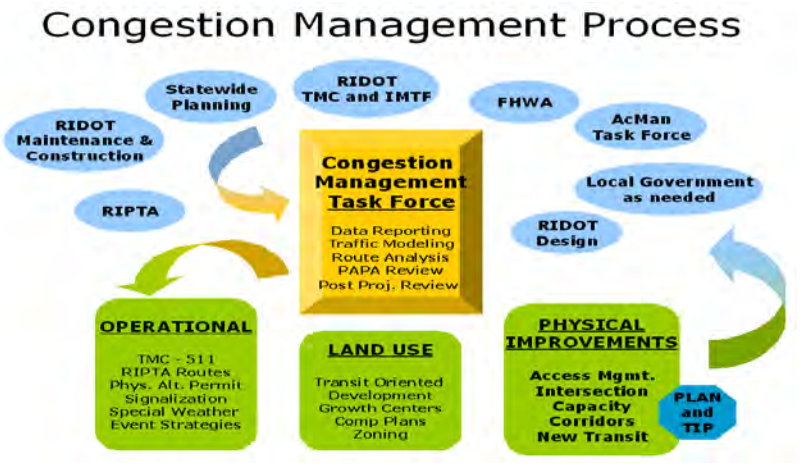
The Task Force generally meets on a quarterly basis and discusses a variety of issues related to recurring and non-recurring congestion, as well as monitoring and reporting out the status of Rhode Island's management of transportation congestion. The MPO and the RIDOT/TMC co-chair this Task Force. Its activities are part of the TMC budget.

As part of the process, the Congestion Management Task Force identifies Rhode Island's congested roadways and may recommend the undertaking of detailed corridor plans to address congestion causes and prioritize solutions within those corridors. Using the strategies of congestion mitigation is particularly important for Rhode Island's roadways because most of the corridors are physically and politically constrained from major capacity expansions (such as adding travel lanes). Accordingly, congestion mitigation strategies must focus on expanding travel choices in the corridor to improve operation of the transportation system and encourage the use of other transportation modes without promoting the use of single-occupant vehicles. The process examines and evaluates existing traffic use, present and projected land use and socioeconomic information, accident data, and trends within the study area to identify the location, causes, and severity of congestion.

The effectiveness of the CMTF relies on the system of data collection, data monitoring and travel forecasting to identify the existing locations of congestion in the region and to forecast the locations where congestion is likely to exist in the future. The CMTF also identifies and helps determine the severity of and causes of the congestion.

CMTF STRATEGIES AND RECOMMENDATIONS

This group makes recommendations to be implemented immediately through the TMC, short term through RIPTA or active design of projects, or long term through TIP projects and land use regulations. The universe of potential recommendations or strategies is presented in the next section. The graphic below describes the inputs and outputs of this process and demonstrates that the solutions get fed back into the process for performance and evaluation.



The following table presents congestion mitigation strategies and technologies that will be considered, deployed, or continued based on the characteristics of the subject corridor.

Congestion Mitigation Strategies & Technologies					
Strategy (based on hierarchy developed in 2004 CMS)	**Congestion**		**Agency**	**Data Required**	**Performance Measure**
	Recurring	**Non-Recurring**			
1. Improve Operations					
Detection			RIDOT/TMC	Speed and Volume	Number of incidents detected
I-95 Corridor Coalition Vehicle Probe Project *			RIDOT, I-95 Corridor Coalition MOU	Speed	Travel time
Public Information / ATIS[1]			RIDOT/TMC	Equipment and communication log	Number of Signs/Messages
Incident Clearance			RIDOT / TMC / IMTF	Incident logs	Incident Clearance Time
Traffic Signalization			RIDOT, Cities &Towns (C&T)	Intersection Capacity Study	Level of Service
Access Management [2]			RIDOT, C&T	Crash Data, Volume	Level of Service, Number of Crashes
Construction Scheduling			RIDOT	Project Dates and Locations	Length of Delay
Intersection Improvements			RIDOT	Intersection Study	Level of Service
Storm Plans			RIEMA / RIDOT	Number Evacuating, Speed and Volume	Number Stranded, Lane Miles Free flowing
Congestion Pricing			RIDOT	Volume, travel time	Length of Delay
2. Mode Shift (TCM) [3]					
Transit - Bus			RIPTA	Farebox	Ridership
Transit - Rail			RIDOT	Passenger Counts	Ridership
APTS [4]			RIPTA	Farebox/Ticketing	Ridership
Carpool			RIPTA	Survey/Census	Mode Split
Bike			RIDOT, C&T	Survey/Census/Counts	Mode Split
Pedestrian			RIDOT, C&T	Survey/Census	Mode Split
Commuter Resource RI			RIPTA	Number of Contacts	Number of Customers

*Project objective is to develop and maintain a corridor wide traffic monitoring system to deliver travel times and speeds on freeways and arterials. Please see "Operational Improvements" on following page for more detailed information.

[1] The Advanced Traveler Information System (*ATIS*) is devoted to the real-time distribution of current traffic, weather and other travel related information to cars, drivers and other Smart Travelers.
[2] Please see "Recommendations of the Access Management Task Force," 2008
[3] Transportation Control Measure (TCM). A strategy to reduce driving or smooth traffic. They are also used to reduce emissions. Examples of TCM's include new or increased rail transit service, or a program to promote carpools and vanpools.
[4] Advanced Public Transportation Systems (APTS). May consist of digital radio communications, global positioning systems, smart card readers, automated passenger counting, automated vehicle systems monitoring, and automated transit information (travel time, wayside, in terminal, in vehicle and pre-trip).

Congestion Mitigation Strategies & Technologies (cont.)					
Strategy (based on hierarchy developed in 2004 CMS)	**Congestion**		**Agency**	**Data Required**	**Performance Measure**
	Recurring	**Non-Recurring**			
Flex Time			Private	Survey	Length of Delay
Telecommute			Private	Survey	VMT saved
4. Land Use					
Comp Planning / Zoning / Model Ordinances			SPP, C&T	Future Land Use and Zoning Maps	Acreage zoned HDR
Transit Oriented Development			SPP, C&T	Census, Building Permits, Certificate of Occupancy	Population Density, Number of Units
Growth Centers / Urban Service Area			SPP, C&T	Census, Building Permits, Certificate of Occupancy	Population Density, Number of Units
Access Management			SPP, C&T	Crash Data, Volume	Level of Service, Number of Crashes
Corridor Plans			RIDOT, C&T		
5. Add Capacity					
Commuter Parking			RIDOT / RIPTA	Vehicle Counts	Lot Usage
Rail (Warwick, Wickford and others)			RIDOT	Passenger Counts	Ridership, VMT saved, On-time performance
Bus Service			RIPTA	Ridership, Speed and Volume	Ridership, VMT saved
Highway (exit 6 I-295 to I-95 @ CT border)			RIDOT	Speed and Volume	Level of Service
HOV lanes			RIDOT	Speed and Volume	Level of Service

OPERATIONAL IMPROVEMENTS

The I-95 Corridor Coalition's Vehicle Probe Project (VPP) enables member agencies to monitor and manage their transportation network, provide accurate traffic information to their users, and assess network performance. The project's objective is to develop and maintain a corridor -wide traffic monitoring system to deliver travel times and speeds on freeways and arterials.

Of the 16 states in the I-95 Corridor Coalition, 10 (ten) states are now receiving and using real-time data to power their 511 systems, provide travel time statewide and comply with the forthcoming interstate traffic monitoring requirements of 23 CFR 511. This is the result of the multi-state collaborative effort among the I-95 Coalition, University of Maryland, and INRIX. Coverage is continuous from New Jersey to Florida.

Continuing under Operational Improvements, the Rhode Island Strategically Targeted Affordable Roadway Solutions (RISTARS) has become a key program for the congestion management process. Administered out of the RIDOT's Traffic Management and Highway Safety Unit, this program identifies critical safety and congestion

locations. RIDOT then works with local governments and planning bodies to develop a detailed improvement plan for the selected locations focused on delivering low-cost and high benefit safety and mobility improvements. RISTARS first major initiative centered on Aquidneck Island and was based on the recommendations of the Aquidneck Island Transportation Corridor Study. RISTARS was selected to commence design work on select recommended improvements to problem areas related to congestion and safety identified from the Aquidneck Island Corridor Study. The corridor study was funded through a FHWA and RIDOT administered by Statewide Planning and directed by the Aquidneck Island Planning Commission. RISTARS is now focusing on data scanning for congestion and traffic safety problems in other travel corridors of the state. In addition, the program will be gearing up to conduct similar corridor studies in other regions of Rhode Island.

Finally, RIDOT has deployed Road Safety Audit (RSA) teams to several corridors and selected roadways around the state to address high hazard and other safety and intersection operational improvements. A Road Safety Audit (RSA) is the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. A RSA qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users. The FHWA works with state and local jurisdictions and Tribal Governments to integrate RSAs into the project development process for new roads and intersections, and also encourages RSAs on existing roads and intersections.

The aim of an RSA is to answer the following questions:

- What elements of the road may present a safety concern: to what extent, to which road users, and under what circumstances?
- What opportunities exist to eliminate or mitigate identified safety concerns?

Road Safety Audit
Performed by a team independent of the project
Performed by a multi-disciplinary team
Considers all potential road users
Accounting for road user capabilities and limitations is an essential element of an RSA
Always generates a formal RSA report
A formal response report is an essential element of an RSA

Aquidneck Island, the Warwick Interlink area, Atwells Avenue in Providence, and the I-95 corridor in Rhode Island are the most recent RSA study areas. The RSA is a new tool which will be a staple of the RIDOT and the CMP.

LAND USE MANAGEMENT

ACCESS MANAGEMENT TASK FORCE

Under the charge and leadership of the state's Congestion Management Task Force, the Access Management Task Force was formed to review and formulate recommendations for RIDOT and local governments to improve the Physical Alteration Permit Process (PAP) regulations and process, and in turn, existing conditions on state roadways through the application of best practices in access management.

PLANNING CHALLENGE GRANTS

Planning Challenge Grants are administered by the Statewide Planning Program and funded with Federal Highway Administration (FHWA) Metropolitan Planning funds received by the State of Rhode Island and allocated to the Statewide Planning Program. The purpose of the grant program is to provide funding for statewide, regional, and local planning studies leading to the implementation of the State Guide Plan, particularly *Land Use 2025* and *Transportation 2035*. The studies must have a transportation planning focus, for example, multi-modal transportation system issues or the interaction between transportation and other aspects of community development including land use. These grants must result in products that lead to or further implement and advance solutions to the issues proposed for study. To be eligible for a grant, an applicant must demonstrate municipal government support and a commitment to implementation. Grants for the towns of Bristol, Smithfield, and Warren enabled the recent completion of studies with corridor access management components.

APPENDIX B

SURVEY RESULTS

For twelve months beginning in 2007 and ending in 2008, RI Statewide Planning's Transportation Section conducted a Transportation 2030 survey. The survey link was posted on the website and administered online through SurveyMonkey. In addition, staff received written responses obtained through public outreach events that were incorporated into this analysis. A total of 135 responses were received.

Almost one half of the respondents were 25 to 39 years of age with most of the remaining balance older. Over seventy percent (70%) have incomes above the median. Sixty-six percent (66%) were male and almost all white (93%). Only two percent (2%) indicated some kind of mobility related disability. Sixty-five percent (65%) own two or more vehicles. Thirty-three percent (33%) have one vehicle. Most use their private automobiles as their primary means of transportation. They also indicated that they drive alone up to 20 miles per day because it is the most convenient form of transportation and the least time consuming.

For the people who have indicated they use transit, it is a fifty percent split for work and recreation as the purpose (which could possibly be attributable to the Providence Newport Ferry). Affordability and environmental friendliness are the major reasons for utilizing this mode. Most of their trips begin with a five-minute walk to the bus stop, and the ride for fifty-eight percent (58%) of them takes 15 to 45 minutes. The three top vote getters in what would get them to use transit more often: 1. transit ran more often, 2. commuter rail from outlying points to Providence, 3. did not have to transfer.

Eighty-nine percent (89%) of walkers are doing so for recreation and fitness, but eleven percent (11%) are actually going somewhere. The majority walks 1 to 3 miles per day, predominantly for exercise. Cyclists are riding for recreation or fitness (ninety-five percent of the respondents) for two miles or less, and they are riding on a bike trail or around a neighborhood.

We asked people to rank funding priorities for the future while showing them a pie chart of where the monies are invested now. They chose the following ranking.

1. Commuter rail and sidewalks (tied).
2. Bus, trolley, and special needs services.
3. Bike paths and lanes.
4. Pavement management.
5. Bridge maintenance.

6. Interstate and highway maintenance.
7. Air quality projects.
8. Safety related projects.
9. Ferry service.
10. Park-and-ride lots.
11. ITS and landscaping.

With that said, sixty-seven percent (67%) favored increasing the gas tax, and are also in favor of the proposal to increase the registration fees on SUVs and trucks (39%), especially if that funding is used for transportation (49%).

When we asked them how should we improve our roadways, they answered, with:

1. more sidewalks and bike lanes
2. roundabouts
3. more signage.

Then we asked how to improve the appearance of our roads. They said,

1. more landscaping
2. fewer billboards

Finally we asked respondents why they live were they live. Their neighborhood was the primary attraction, with affordability and proximity to work coming second and third.

A land use question and future living location rounded out this section. People who chose to answer said that commercial and residential growth should be directed to urban or downtown locations with villages and mixed-use locations second. This includes existing and new centers. We asked where they would move to next given the choices of 1. rural, large lot suburban, 2. traditional small lot neighborhood, 3. village with mixed use or 4. downtown or urban? The results were thirty-three percent (33%) to a downtown or urban setting and twenty-nine percent (29%) to a village with mixed use. The remainder was split evenly between the choices of suburban and rural living.

The survey instrument and results (in red) appear below.

APPENDIX C - TRANSPORTATION FUNDING SCENARIOS

TRANSPORTATION FUNDING SCENARIOS

annual costs in millions of dollars

Transportation Elements	Sink	Units	Tread Water	Units	Swim	Units	Win the Race	Units	Assumptions
RIDOT Operations									
RIDOT Central Management	$3.60		$4.50		$4.50		$5.00		
RIDOT Management & Budget	$3.43		$5.00		$5.00		$6.00		
RIDOT Engineering	$3.72		$5.00		$5.00		$5.00		RIDOT Engineering should be 100% state funded
RIDOT Maintenance Operations									
Maintenance	$25.00		$35.00		$40.00		$50.00		Maintenance currently funded based on limited budget after debt service and winter maintenance needs met. Ideally, to properly maintain maintain state facilities, double the amount of funding is required.
Winter Maintenance	$6.22		$12.00		$12.00		$15.00		
Vehicle Maintenance	$3.33		$5.00		$5.00		$5.00		
Stormdrain Cleaning	$0.00		$2.00		$2.00		$2.00		
SUBTOTAL	**$45.30**		**$68.50**		**$73.50**		**$88.00**		
Capital Program Labor	**$0.00**		**$40.00**		**$40.00**		**$40.00**		
TOTAL Operations	**$45.30**		**$108.50**		**$113.50**		**$128.00**		
Capital Maintenance									
Bridge Inspection	$1.50	1	$3.00	20	$5.00	20	$7.50	25	Implementing a realistic capital maintenance program with state funds will enable RIDOT to reduce costs for road and bridge reconstruction and replacements over the long term.
Bridge Painting	$0.30		$6.00		$6.00		$7.50		
Bridge Preventive Maintenance	$2.00		$5.00		$10.00		$20.00		
Bridge Washing	$0.50	1.25	$1.00	2	$2.00	6	$5.00	10	
Drainage	$0.62		$5.50		$8.50	18	$18.00		
Thin Overlays	$3.50		$5.00		$7.50		$10.00		
Crack Sealing	$1.00		$1.50	1,000	$2.00	1,500	$2.00	2,000	
Repair Lighting	$0.00		$0.50		$0.75		$1.00		
Repair Damaged Hardware	$1.00		$2.00		$2.00		$3.00		
Sign Replacement	$1.50	12	$3.00	25	$4.00	32	$6.00	48	
Signal Construction	$0.90	9	$2.00	20	$5.00	50	$8.00	80	
Striping	$6.24	2,580	$7.50	3,200	$15.00	6,400	$20.00	8,500	
Deck Joints	$0.20	8	$2.50	100	$2.50	100	$2.50	100	
Traffic Monitoring	$0.31		$0.50		$1.00		$2.00		
	$19.57		**$45.00**		**$71.25**		**$112.50**		
Highway									
Reconstruction/New Sidewalks	$0.38		$36.00	4	$36.00	4	$36.00	4	4 miles per year, does not increase due to better scheduled 1R projects, 14 miles of sidewalk rehabilitation is included. RIDOT personnel costs are removed from projects and funded at 100% state cost.
Resurfacing (1R)	$2.61		$50.00	100	$72.00		$72.00		Includes sidewalks with repaving on a 15 year cycle, and personnel costs are removed from projects and funded at 100% state cost.
Major Highway Projects	$15.63		$50.00		$50.00		$50.00		Projects include: I-95/RI-4 interchange, Waterfront Drive, Apponaug Circulator, RI146/RI-116 interchange, RI-4/US-1 interchange, Pell Bridge
Interstate	$18.60		$25.00		$40.00		$50.00		Projects include: (Swim) Third lane on I-95: from I-295 to I-95 Exit 6 and on I-295 from I-95 to RI-37; (Win) Third lane on I-95: from I-95 Exit 6 to CT State line and on I-295: RI-37 to US-6.
Local Transportation Assistance	$0.00		$0.00		$25.00		$100.00		Establish a new local transportation road and bridge funding source.
Landscape	$1.87		$6.00	100	$7.50		$10.00		
Stormdrain System Upgrades	$0.85		$4.00		$4.00		$4.00		
Access Management	$0.00		$3.00		$5.00		$10.00		Begin a new access management program

Transportation Elements	Sink	Units	Tread Water	Units	Swim	Units	Win the Race	Units	Assumptions
ADA	$2.34		$3.00		$5.00		$10.00		
	$42.28		**$177.00**	**204**	**$244.50**		**$342.00**		
Traffic Safety									
High Hazard Intersections	$4.56	18	$10.00	40	$15.00	40	$25.00	50	
Arterials	$1.25	16	$7.50	50	$10.00	50	$15.00	60	
	$5.81		**$17.50**		**$25.00**		**$40.00**		
Bridge									
Replacements/Rehabilitations	$60.51	16	$78.00	26	$78.00	26	$78.00	26	
Major Bridge Projects	$6.64	2	$50.00	5	$50.00	5	$50.00	5	Projects include: Providence Viaduct, Bridge #550, Henderson Bridge
	$67.15		**$128.00**		**$128.00**		**$128.00**		
Bike/Pedestrian									
Recreational Trails	$0.60		$0.75		$0.75		$0.75		
New Sidewalks	$2.10	4	$4.00	8	$6.00	12	$8.00	15	New sidewalks not included in the highway reconstruction and 1R programs
Bike Paths	$5.00	4	$10.00	12	$15.00	12	$20.00	15	Includes on- and off-road bike paths, and ROW acquisitions: (Tread) finish system in TIP; (Swim) complete connections between various legs of the system; (Win) rehabilitate and build major bridges.
Safe Routes to School	$0.82	10	$1.00	10	$2.00	20	$3.00	30	
	$8.52		**$15.75**		**$23.75**		**$31.75**		
SPR/PL	**$5.00**		**$8.00**		**$8.00**		**$8.00**		
Enhancements									
Transportation	$2.22	8	$12.75	16	$15.00	16	$25.00	20	
Non-Transportation	$1.78		$0.00		$0.00		$0.00		
	$4.00		**$12.75**		**$15.00**		**$25.00**		
CMAQ									
RIDOT	$5.68		$7.00		$8.00		$8.00		
RIPTA	$3.08		$6.00		$7.00		$7.00		
RIDEM	$0.75		$1.00		$1.50		$1.50		
Other	$0.24		$2.00		$3.50		$3.50		
	$9.75		**$16.00**		**$20.00**		**$20.00**		
Labor Charges transferred to Operations	**$0.00**		**($40.00)**		**($40.00)**		**($40.00)**		
Commuter Rail									
Capital	$3.00		$10.00		$25.00		$30.00		(Swim) includes Providence to Westerly service, Aquidneck Island service; (Win) includes Blackstone Valley service, Providence metro area streetcars, busways or other fixed guideway systems. Subject to change based on RIPTA transit study.
Operations	$2.37		$3.50		$7.00		$30.00		
	$5.37		**$13.50**		**$32.00**		**$60.00**		
Warwick Train Station	**$15.00**		**$0.00**		**$0.00**		**$0.00**		
ROW	**$0.25**		**$0.50**		**$5.00**		**$10.00**		
Design	**$20.50**		**$25.00**		**$40.00**		**$60.00**		
RIPTA Bus									
Capital	$24.00		$30.00		$35.00		$50.00		Tread provides regular replacement of buses, vans and non-revenue vehicles. Swim relieves overcrowding and provides for modest increase in service. Win includes expanded flex service, addition of 1 major transit hub in Providence and a new satellite hub in the suburbs. Figures subject to change.
Operations	$88.00		$125.00		$140.00		$175.00		
	$112.00		**$155.00**		**$175.00**		**$225.00**		
Total	**$360.50**		**$682.50**		**$861.00**		**$1,150.25**		

Transportation Elements	Sink	Units	Tread Water	Units	Swim	Units	Win the Race	Units	Assumptions
GARVEE*	58.00				$0.00		$0.00		GARVEE debt service will be complete by 2026.
Other debt service**	35.00								Debt service covered by gasoline tax is scheduled to increase dramatically unless a new source of match funding is found. The assumption is that a new source will be found and that RIDOT will pay a declining amount of debt service until the principle balance is paid.
Total with debt service	**453.50**		*Ends in 2022 at $16.5m per year (peaks 2017-2019 at $51m).						
			**Increases from $41m in 2009 to $63m in 2023 per year if this practice continues.						
			There will be a transition period between scenarios in which old debt must be paid down.						
STATE REVENUE SOURCES	**Sink**	**Units**	**Tread Water**	**Units**	**Swim**	**Units**	**Win the Race**	**Units**	
GAS TAX	**132.00**	0.30	**205.00**	0.45	**273.00**	0.60	**341.00**	0.75	Each penny yields 4.55 million
REGISTRATION FEES	**0.00**		**50.00**		**75.00**		**100.00**		Requires diversion of current revenue in Tread; increase in Swim and Win
VEHICLE SALES TAX	**0.00**		**80.00**	7%	**80.00**	7%	**80.00**	7%	Requires diversion of current revenue
TOLLS	**0.00**		**30.00**		**50.00**		**60.00**		Does not include Newport Bridge tolls
GAS SALES TAX	**0.00**		**0.00**		**0.00**		**80.00**	7%	4.55 million gallons, $2.50 per gallon, 7% tax
GEN OBLIGATION BONDS	**40.00**		**0.00**		**0.00**		**0.00**		
FAREBOX	**20.00**		**35.00**		**40.00**		**55.00**		25% farebox recovery of bus and rail operations
OTHER	**12.00**		**15.00**		**17.00**		**20.00**		Advertising, land sales, other miscellaneous revenue
STATE Subtotal	**204.00**		**415.00**		**535.00**		**736.00**		
FEDERAL REVENUE									
FHWA	**200.00**		**210.00**		**250.00**		**310.00**		
NHTSA	**6.00**		**2.00**		**2.00**		**5.00**		
FTA	**45.00**		**55.00**		**75.00**		**100.00**		
TOTAL	**455.00**		**682.00**		**862.00**		**1151.00**		
ALTERNATIVE FUNDING									
MILEAGE TAX	**423.00**	5.1	**632.00**	7.6	**805.00**	9.7	**1076.00**	13.0	Pennies per mile tax to replace all state and federal revenue except Farebox and Other. 8.3 Billion VMT per year in RI.

APPENDIX D – GLOSSARY, ACRONYMS, AND LINKS

GLOSSARY

Annual Average Daily Traffic (AADT) – Actual or estimated typical daily traffic on a road segment for all days of the week, Sunday through Saturday, over the period of one year. Estimates may be derived from partial count data.

Average Daily Traffic (ADT) – Actual or estimated typical daily traffic on a road segment for one day, usually either a weekday or a weekend day. Estimates may be derived from partial count data.

Access – The facilities and services that make it possible to get to any destination, measured by the availability of physical connections (roads, sidewalks, etc.), travel options, ease of movement, and nearness of destinations.

Clean Air Act and its Amendments (CAAA) - The federal law that requires urban areas not meeting air quality standards to modify transportation policies in order to reduce emissions. This law makes air quality a primary concern in transportation decision-making.

Congestion Mitigation and Air Quality (CMAQ) - A special provision of the Intermodal Surface Transportation Efficiency Act that directs funds towards projects in Clean Air Act Non-Attainment areas for ozone and carbon monoxide.

Congestion Management System (CMS) - A systematic process, which provides information on transportation system performance and alternative strategies to alleviate congestion and enhance the mobility of persons and goods. A CMS includes methods to monitor and evaluate performance, identify alternative actions, access and implement cost-effective actions, and evaluate the effectiveness of implemented actions.

Conformity – An assessment of the compliance of any transportation plan, program, or project with air quality improvement plans. The Clean Air Act defines the conformity process.

East Coast Greenway – A proposed 3,000 mile traffic free path from Calais, Maine to Key West, Florida.

Environmental Protection Agency (EPA) – The federal regulatory agency responsible for administrating and enforcing federal environmental laws including the Clean Air Act.

Federal Highway Administration (FHWA) – The agency of the U. S. Department of Transportation that funds surface transportation planning and programs.

Financial Plan - TEA 21 requires that Plan recommendations are actually affordable. There should be a reasonable certainty that funding sources will be adequate for implementation.

Functional Classification – A hierarchical system of categorizing streets and roads on the basis of the way they are used, the volumes of traffic they carry, and the way they function within the context of the overall transportation system.

Federal Transit Administration (FTA) – An agency of the U.S. Department of Transportation that funds public transportation planning and programs.

High Occupancy Vehicle (HOV) Lanes - Lanes on heavily congested roadways that are used exclusively by carpools, vanpools, buses or any vehicle that transports multiple passengers.

Intelligent Transportation Systems (ITS) - Technologies that improve the management and efficiency of our transportation system, such as electronic toll collection, timed traffic signals, onboard navigation systems, traffic monitoring devices, and driver information systems.

Intermodal – The term "mode" refers to and distinguishes the various forms of transportation, such as automobile, transit, ship, bicycling and walking. Intermodal refers specifically to the connections between modes.

Intramodal - See 'Intermodal' (above) for definition of "mode". Intermodal refers specifically to the connections within a single mode.

Intermodal Surface Transportation Efficiency Act (ISTEA) – The federal transportation authorization bill of 1991, landmark legislation that restructured programs for all methods of transportation. (Reauthorized as TEA-21 in 1998.)

Land Use – Activities conducted on the land, such as housing, shopping centers, farms, and office buildings.

Level of Service (LOS) – A rating of the performance of a highway segment or intersection using the letters A (no delays) through F (failing).

Metropolitan Planning Organization (MPO) – The organization required by the federal government, designated by states, and operated by local officials for developing transportation programs in urban areas of 50,000 or more people. The MPO for our region is the State Planning Council.

Mobility – The movement of people or goods throughout our communities and across the region. Mobility is measured in terms of travel time, comfort, convenience, safety and cost.

Multimodal – A transportation system that considers and provides facilities for all modes (auto, bus, bike, pedestrian, rail).

Park-and-Ride – Parking lots in outlying areas for people who use transit, carpools, or vanpools for trips.

Plan – A blueprint to guide the region's transportation for the next 25 years. Federal law requires the Plan be updated every three years (in areas that do not meet air quality standards) to ensure that the plan remains current and effective at achieving the goals. Sometimes referred to as Regional Transportation Plan (RTP) or Long Range Plan (LRP).

Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU) - SAFETEA-LU authorizes the Federal surface transportation programs for highways, highway safety, and transit for the 5-year period 2005-2009. It was signed into effect in august 2005 and replaced and expanded on the previous TEA-21 authorization bill.

Statewide Implementation Plan (SIP) – Documents prepared by states and submitted to the EPA for approval, which identify actions and programs to carry out the requirements of the Clean Air Act.

Statewide Travel Demand Model: The model is an effective tool for determining changes or redistribution of traffic flows associated with changes or improvements to the network. The model is also used in projecting future traffic on the networks due to changes in demographics, or the development of special trip generators such as new businesses or stadiums. Computerized demand models are sophisticated and provide additional data such as system wide VMT's or VHT's (vehicle miles of travel and vehicle hours of travel). A model can also provide estimates of travel speeds on a link-by-link basis. The speeds are normally predicted as an average 24-hour speed; however, they can be adjusted to provide an average hourly speed.

Transportation Advisory Committee (TAC) – An advisory committee to the RI State Planning Council that represents a diverse group of organizations. The mission of the TAC is to advise the Council on public participation strategies, the Plan, and the TIP, and to provide a forum for public input.

Transportation Equity Act for the 21st Century (TEA-21) – The acronym for the 1998 federal transportation authorization bill. Replaced ISTEA, but continued and expanded ISTEA's restructured programs for all modes of transportation. It provides guidelines to authorize federal funding of transportation projects. (Reauthorized as SAFETEA-LU in 2005)

Texas Transportation Institute (TTI) – Research institution.

Transportation Improvement Program (TIP) – A program that lists all federally funded projects and services in the MPO region, covering a period of three years. It is developed annually in cooperation with RIDOT and affected transit operators.

Traffic Calming Techniques – Design techniques to decrease the speed of vehicle traffic on streets, while still providing vehicle circulation in an area. Techniques include speed bumps, landscaping, and roundabouts.

Transit – Passenger service provided to the public along established routes. Paratransit is a demand - response service serving the needs of persons that standard fixed route transit would serve with difficulty or not at all.

Transit-Oriented Development (TOD) - Characterized by a layout that encourages use of public transit service and walking or bicycling instead of automobile use for many trip purposes. Typically, it places higher density development within an easy walking distance (¼ to ½ mile) of a public transit station or stop and is mixed-use and accessible by other modes. It is compact, pedestrian friendly, and has a transit stop or station as an activity center.

Unified Planning Work Program (UPWP) – A plan, developed by MPO, that guides alltransportation planning activities for agencies in the MPO region.

Vehicle Miles of Travel (VMT) – A standard area-wide measure of travel activity, calculated by multiplying average trip length by the total number of trips.

ACRONYMS

Text that is underlined is a web link to that organization or subject

A text definition that is followed by an asterisk "*" is further defined in the glossary

AADT	Annual Average Daily Traffic*
AASHTO	American Association of State Highway and Transportation Officials
ADA	Americans with Disabilities Act
ADT	Average Daily Traffic*
AMPO	Association of Metropolitan Planning Organizations
APA	American Planning Association

AQ/ T	Air Quality/Transportation Sub Committee of the TAC (Rhode Island)
BID	Business Improvement District
BTS	Bureau of Transportation Statistics
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CBD	Central Business District
CMAQ	Congestion Management and Air Quality (pronounced "see mac")*
CMS	Congestion Management System*
CNG	Compressed Natural Gas
CNU	Congress for New Urbanism
CO	Carbon Monoxide Environmental Protection Agency – Carbon Monoxide
CONEG	Coalition of Northeastern Governors
CRMC	Coastal Resources Management Council (Rhode Island)
DEM	Department of Environmental Management (Rhode Island)
DMV	Division of Motor Vehicles (Rhode Island)
DMS	Dynamic Message Signs
EPA	United States Environmental Protection Agency
EJ	Environmental Justice
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FMCSA	United States Federal Motor Carrier Safety Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
GARVEE	Grant Anticipation Revenue Vehicle
GIS	Geographic Information System
GO Bonds	General Obligation Bonds
HC	Hydrocarbon Environmental Protection Agency – Hydrocarbons
HOV	High Occupancy Vehicle*
HPMS	Highway Performance Monitoring System
HUD	Housing and Urban Development

ISTEA	Intermodal Surface Transportation Act (replaced by TEA-21, which was replaced by SAFETEA-LU)
ITS	Intelligent Transportation System*
JTW	Journey to Work
LOS	Level of Service*
LRP	Long Range Plan
MADD	Mothers Against Drunk Driving
MBTA	Massachusetts Bay Transit Authority
MPO	Metropolitan Planning Organization*
MSA	Metropolitan Statistical Area
MUTCD	Manual of Uniform Traffic Control Devices
NAAQS	National Ambient Air Quality Standards
NARC	National Association of Regional Councils
NCBW	National Center for Bicycling & Walking
NCHRP	National Cooperative Highway Research Program
NEPA	National Environmental Protection Act
NETC	New England Transportation Consortium
NH_3	Ammonia or Ammonium
NHS	National Highway System
NHTSA	National Highway Traffic Safety Administration
NO	Nitric Oxide
NO_2	Nitrogen Dioxide Environmental Protection agency – Nitrogen Dioxide
NO_X	Nitrogen Oxide Environmental Protection agency – Nitrogen Oxide
NPTS	National Personal Transportation Survey
NTI	National Transit Institute
O3	Ozone Environmental Protection agency -- Ozone
PM	Particulate Matter. Often followed by a subscript number (usually 10 or 2.5) indicating particulate matter of a certain size in microns Environmental Protection agency – Particulate Matter
RIDEM	Rhode Island Department of Environmental Management
RIDOH	Rhode Island Department of Health
RIDOT	Rhode Island Department of Transportation

RIEDC	Rhode Island Economic Development Corporation
RIEMA	Rhode Island Emergency Management Agency
RIGIS	Rhode Island Geographic Information System
RIPTA	Rhode Island Public Transit Authority
RISM	Rhode Island state model
RISPP	Rhode Island Statewide Planning Program
RITBA	Rhode Island Turnpike and Bridge Authority
ROW	Right of Way
RPA	Regional Planning Authorities
SCORP	State Comprehensive Outdoor Recreational Plan
SCPWG	Safety Conscious Planning Working Group (a TRB group) now known as the Transportation Safety Planning Working Group (TSPWG),
SIP	State Implementation Plan for Air Quality*
SO_2	Sulfur Dioxide Environmental Protection Agency – Sulfur Dioxide
SO_3	Sulfur Trioxide
SOV	Single Occupancy Vehicle
SO_X	Sulfur Oxide Environmental Protection Agency – Sulfur Oxide
SRTS	Safe Routes to School
STP	Surface Transportation Plan
STIP	State Transportation Improvement Program
STPP	Surface Transportation Policy Partnership
STRAHNET	Strategic Highway Network
T2	Technology Transfer
TAC	Transportation Advisory Committee (Rhode Island)*
TDM	Travel Demand Model
TEA-21	Transportation Efficiency Act for the 21st Century (Replaced by SAFETEA-LU)
TIP	Transportation Improvement Program*
TMC	Transportation Management Center
TOD	Transit Oriented Development*

TRB	Transportation Research Board
TSD	Transit Service District
TSPWG	Transportation Safety Planning Working Group
TTI	Texas Transportation Institute
URITC	University of Rhode Island Transportation Center
USDOT	United States Department of Transportation
UV	Ultraviolet Radiation Environmental Protection Agency Ultraviolet Radiation
VMS	Variable Message Signs
VMT	Vehicle Miles of Travel *
VOC	Volatile Organic Compounds Environmental Protection Agency VOC

LINKS

HURRICANE EVACUATION MAPS	http://www.riema.ri.gov/hazards/hurricane_evac.php
HAZARD QUICK LINKS	http://www.riema.ri.gov/hazards/hurricane.php
DEM: TMDL DOCUMENTS	http://www.dem.ri.gov/programs/benviron/water/quality/rest/reports.htm
DEM 303d	http://www.dem.ri.gov/pubs/303d/index.htm

APPENDIX E

PUBLIC REVIEW OF THE PLAN

Consistent with the Public Participation Guide, the Public Hearing Notice and copy of the draft Plan was mailed to the following prior to the public hearing:

- Transportation Advisory Committee
- Technical Committee
- State Planning Council

The Public Hearing Notice was mailed to the following on October 12, 2012:

- Town Planners
- Chief Elected Officials (cities and towns)
- Public Works Directors
- Council Presidents
- Transportation List
- Transportation Providers
- General Assembly leadership
- Congressional Delegation
- Social Advocacy Groups
- Public Hearing List

The Public Notice was also e-mailed to the Rhode Island Statewide Planning e-News list and the Environmental Justice list. It was also posted at www.planning.ri.gov for 34 days.

The following items are included in the Appendix.

- Public Notice, published in the Providence Journal on Friday, October 12, 2012
- Summary of comments received and responses to comments

The full public hearing report, including all written comments, is on file at the Rhode Island Statewide Planning Program office.

STATE PLANNING COUNCIL
STATEWIDE PLANNING PROGRAM
RHODE ISLAND DEPARTMENT OF ADMINISTRATION
One Capitol Hill
Providence, RI 02908-5870

PUBLIC NOTICE

Long Range Transportation Plan Draft

Transportation 2035

The Rhode Island State Planning Council will conduct two public hearings to accept comments on the draft statewide long range surface transportation plan, *Transportation 2035.*

A draft of the statewide long range surface transportation plan, *Transportation 2035* is under consideration by the Rhode Island State Planning Council. This plan, which is updated every four (4) years, serves many purposes. It fulfills federal requirements for statewide and metropolitan planning under current transportation legislation, it provides a long-range framework for coordination among various modes and advancing projects in the Transportation Improvement Program, it sets state policy to guide public and private decisions involving transportation toward the end of improving the economic, social, and environmental well-being of the state, and as a State Guide Plan element, it is a basis for determining consistency of local comprehensive plans and other plans, programs, and projects with state policies. This plan update is limited in scope and does not alter the goals, objectives, policies and strategies of the State's previous long range transportation plan, *Transportation 2030.* This update primarily incorporates new data from the 2010 Census, programmatic funding from the FY 13-16 Transportation Improvement Program, and an analysis of anticipated federal and state transportation funding resources.

Transportation 2035 is available for review on the R.I. Statewide Planning Program website at http://www.planning.ri.gov/transportation/default.htm or at the Program's office, One Capitol Hill, 3rd floor, Providence, RI between 8:30 a.m. and 4:00 p.m., Monday through Friday.

Two public hearings are scheduled:

Wednesday, November 14, 2012 at 9:00 a.m.
Department of Administration
William E. Powers Building
Conference Room A, 2nd Floor
One Capitol Hill, Providence, RI

Thursday, November 15, 2012 at 6:30 p.m.
Department of Administration
William E. Powers Building
Conference Room A, 2nd Floor
One Capitol Hill, Providence, RI

All persons may present their views on the draft document in person, through a representative, or by filing a written statement. Written statements may be mailed to Linsey Callaghan, Supervising Transportation Planner, RI Statewide Planning Program, One Capitol Hill, Providence, RI 02908, or submitted at a hearing. All comments must be received before the close of the public hearing on November 15, 2012.

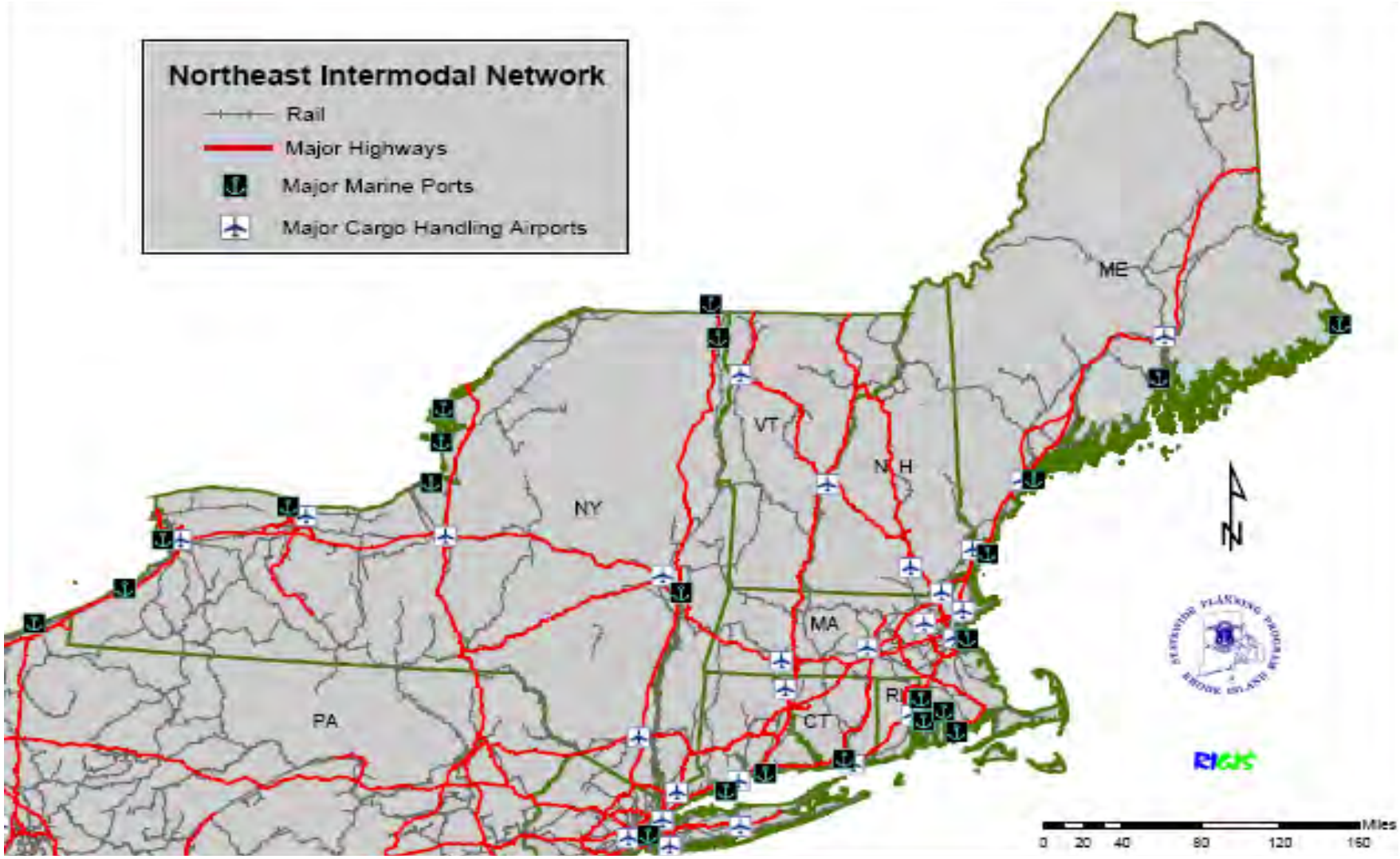
The public hearing location is accessible to individuals with disabilities. Individuals requesting assistance should contact Ms. Dawn Vittorioso at (401) 222-7901 at least 48 hours prior to the scheduled start of a hearing. Public transit schedule information for the workshops is available from RIPTA at (401) 781-9400 or www.ripta.com.

Kevin Flynn
Secretary, State Planning Council

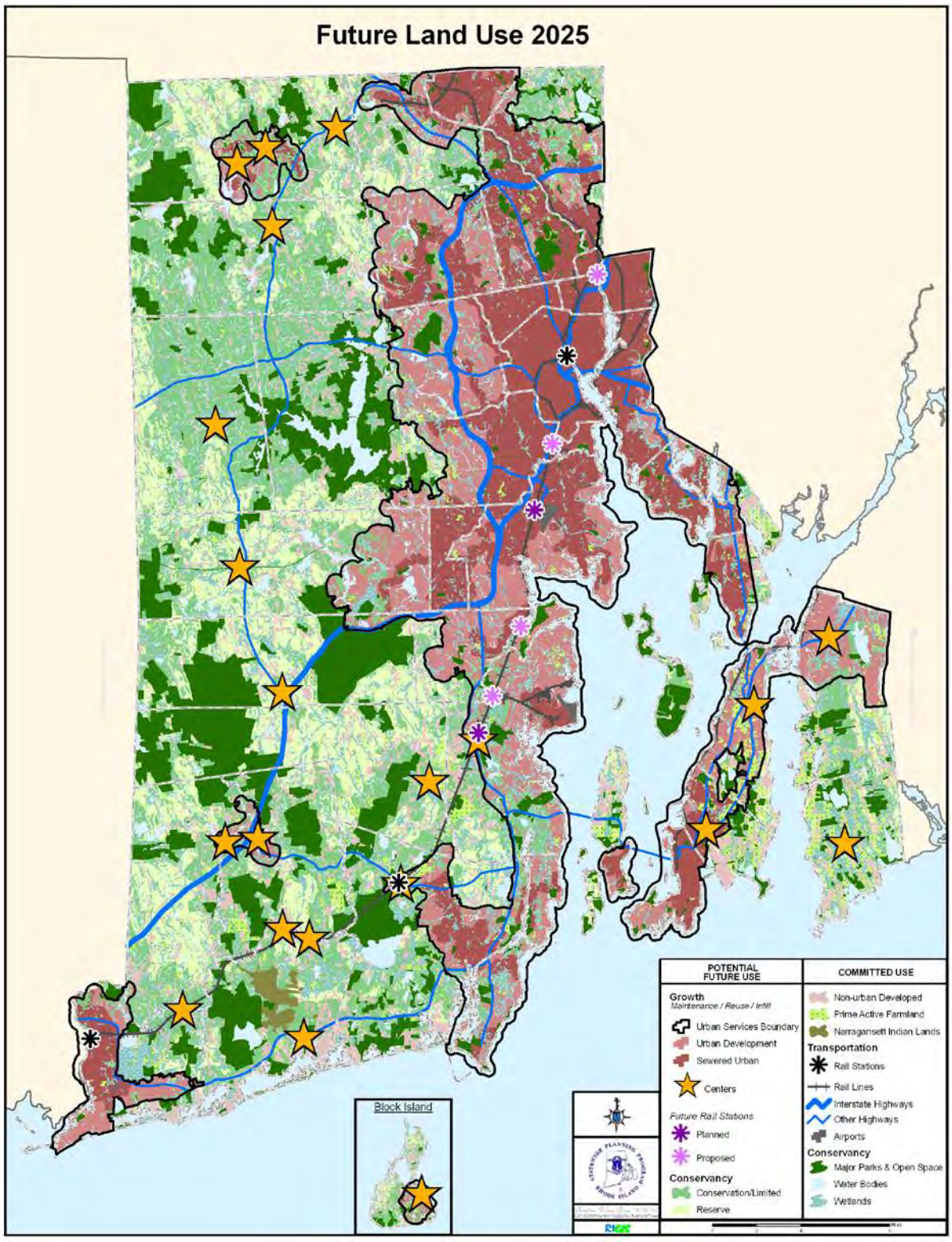
To Run: Friday, October 12, 2012

MAPS

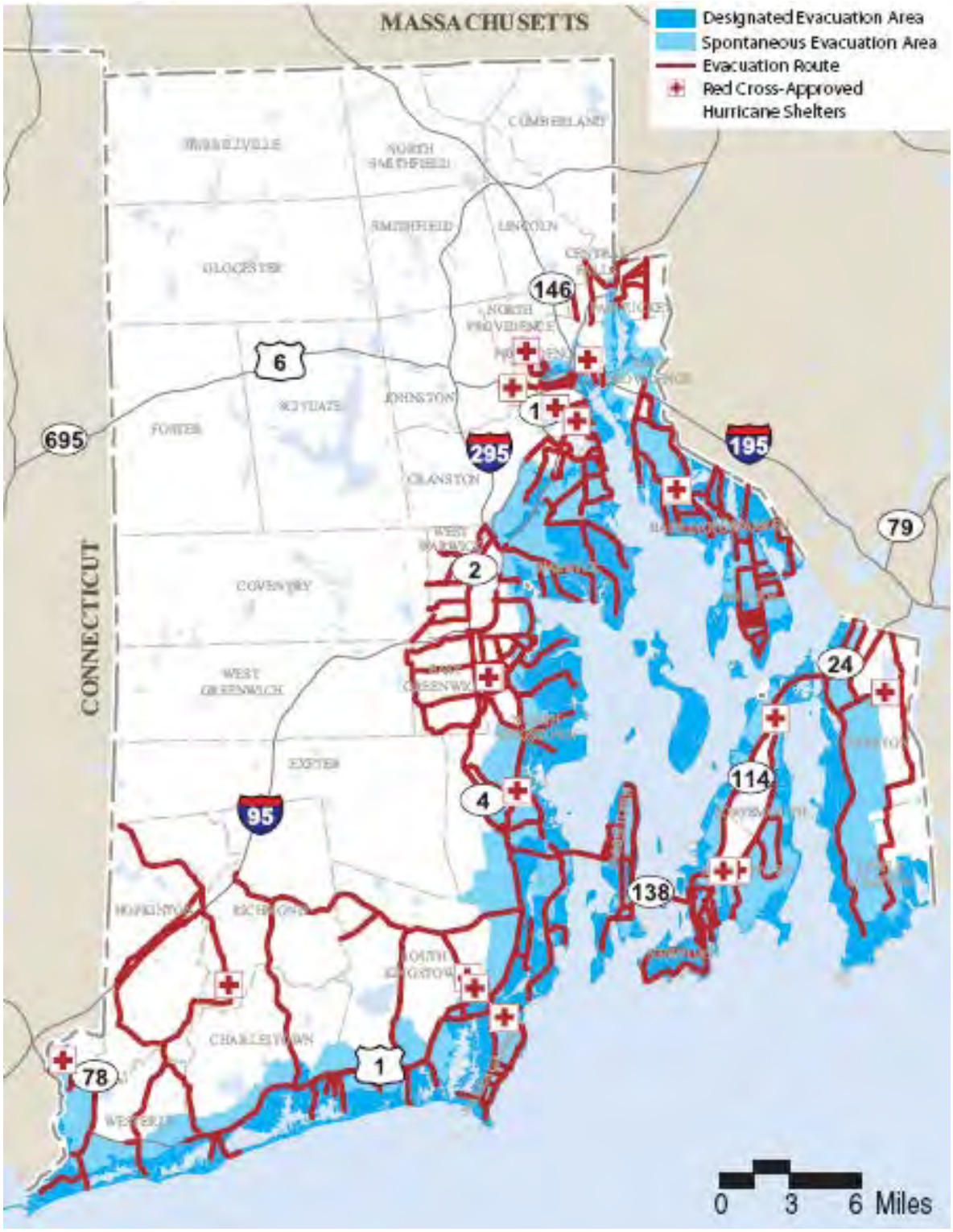
MAP 1-1 REGIONAL MAP



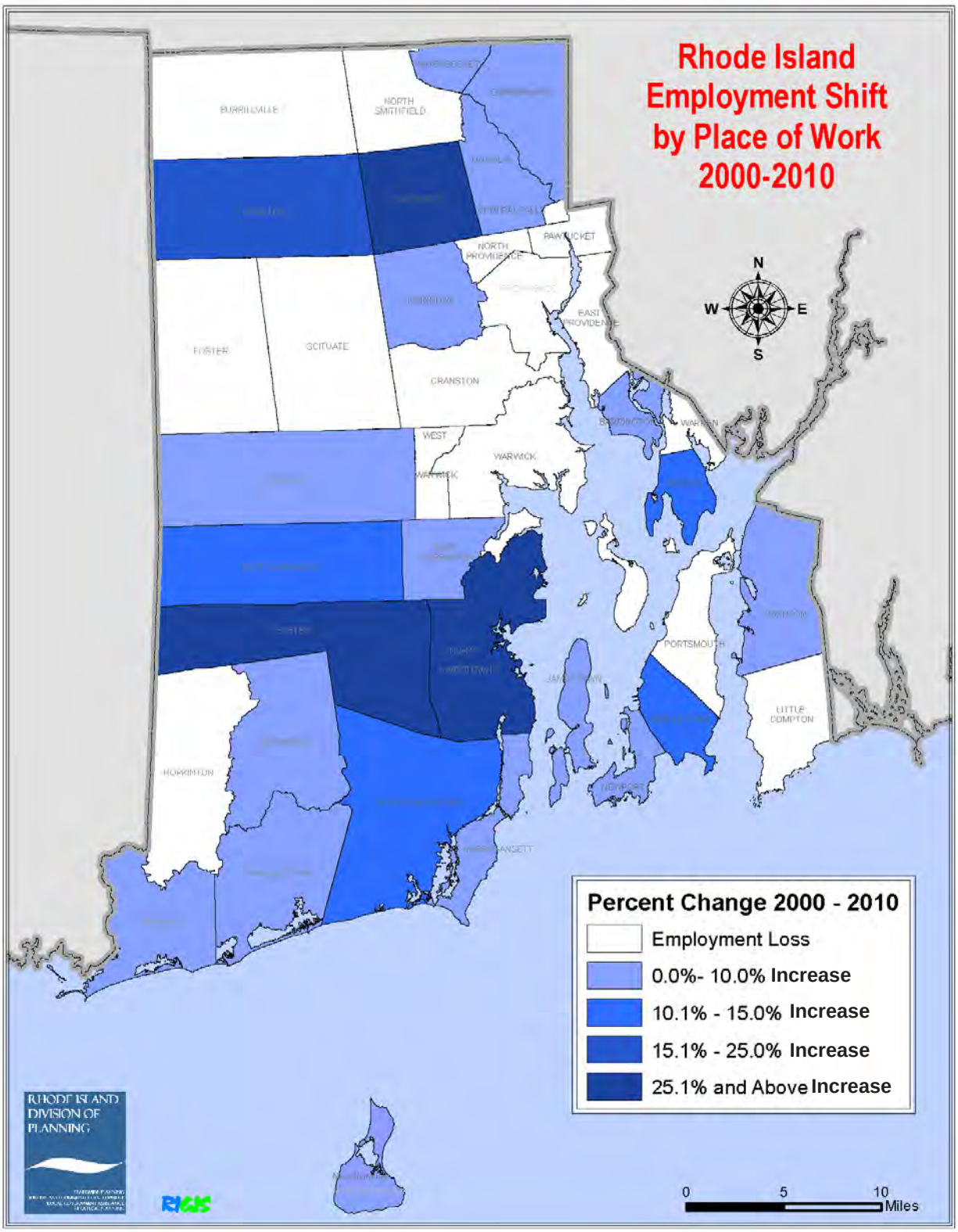
MAP 1-2 STATE LAND USE PLAN



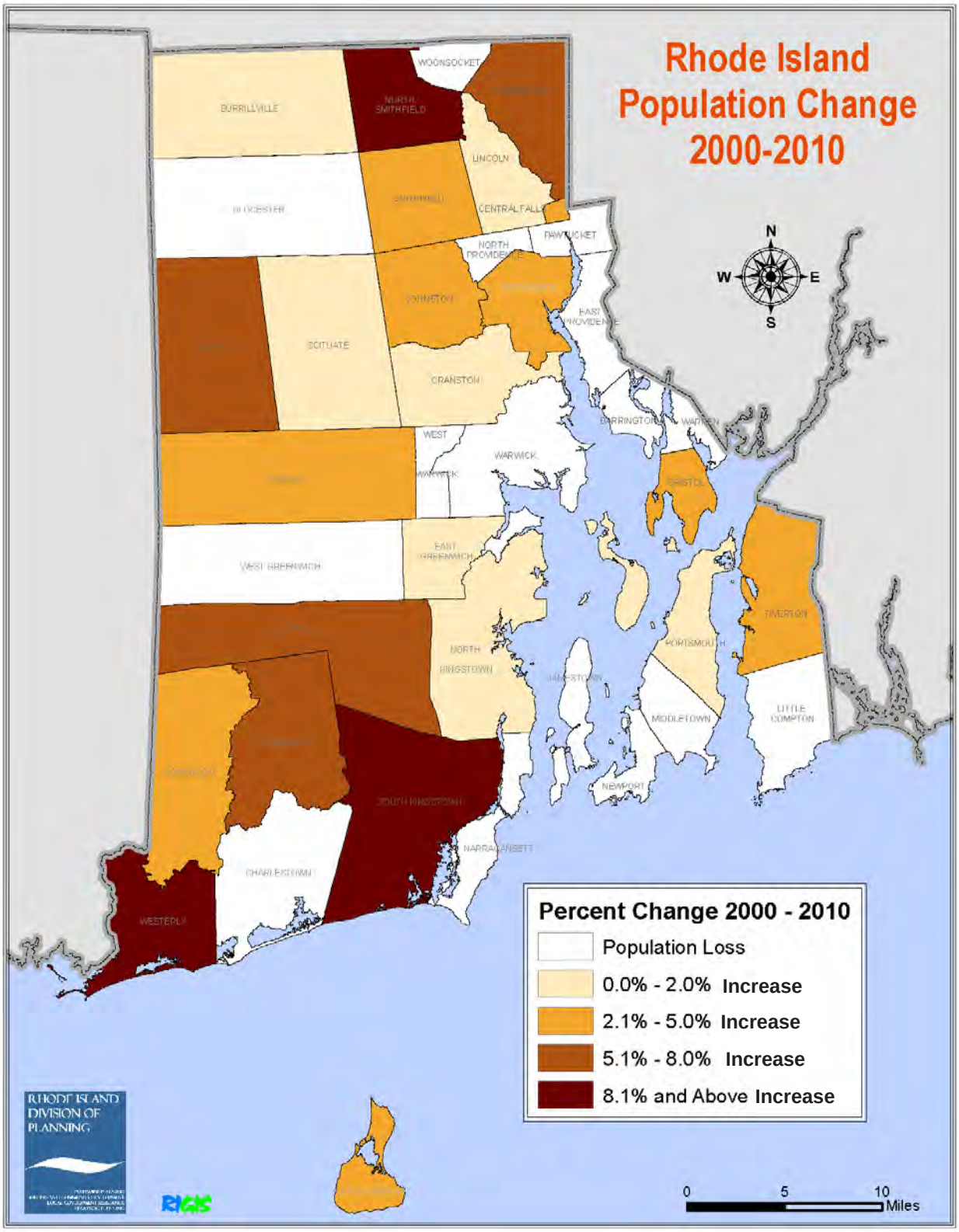
MAP 1-3 HURRICANE EVACUATION ROUTES, 2008



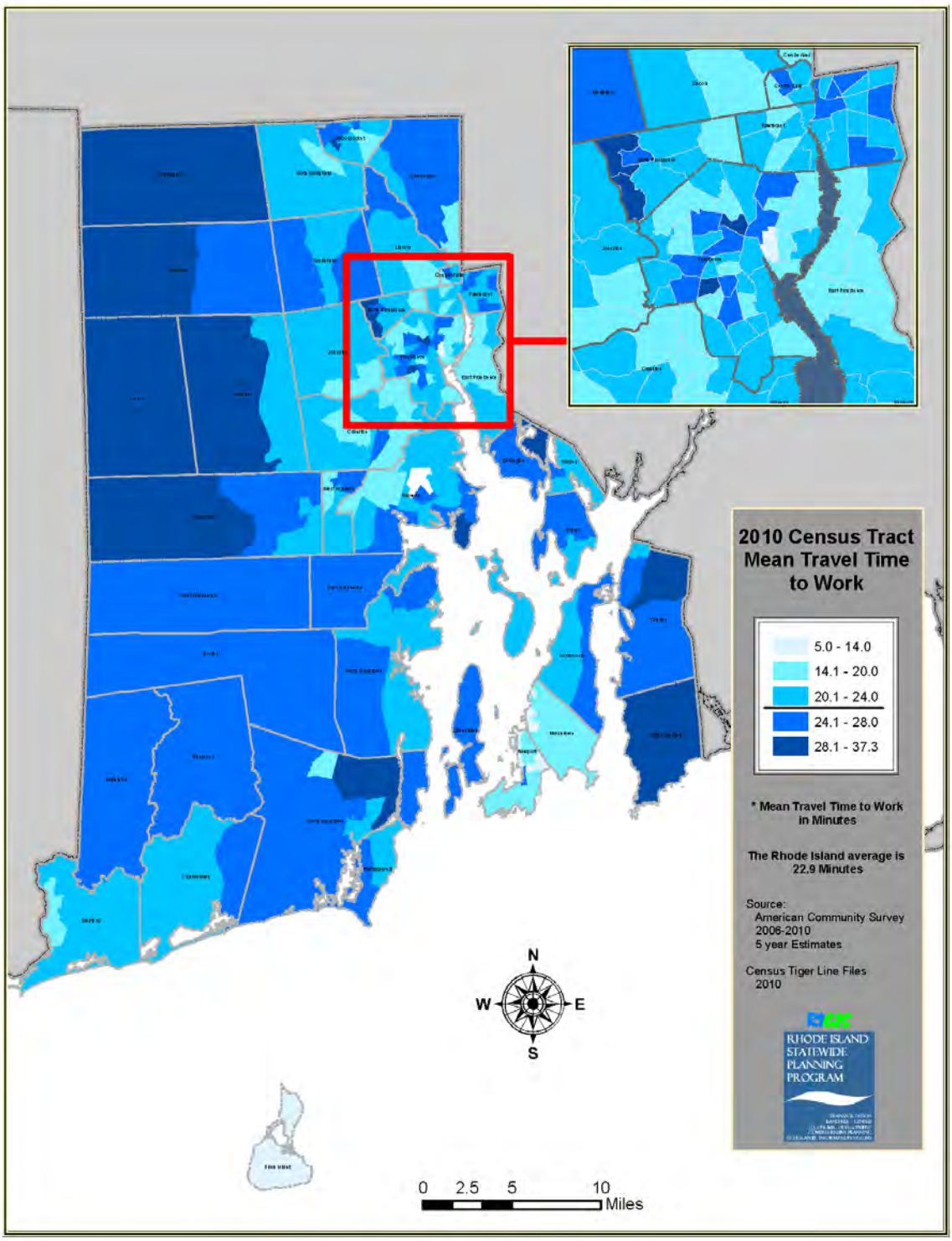
MAP 1-4 EMPLOYMENT SHIFT BY PLACE OF WORK, 2000-2012



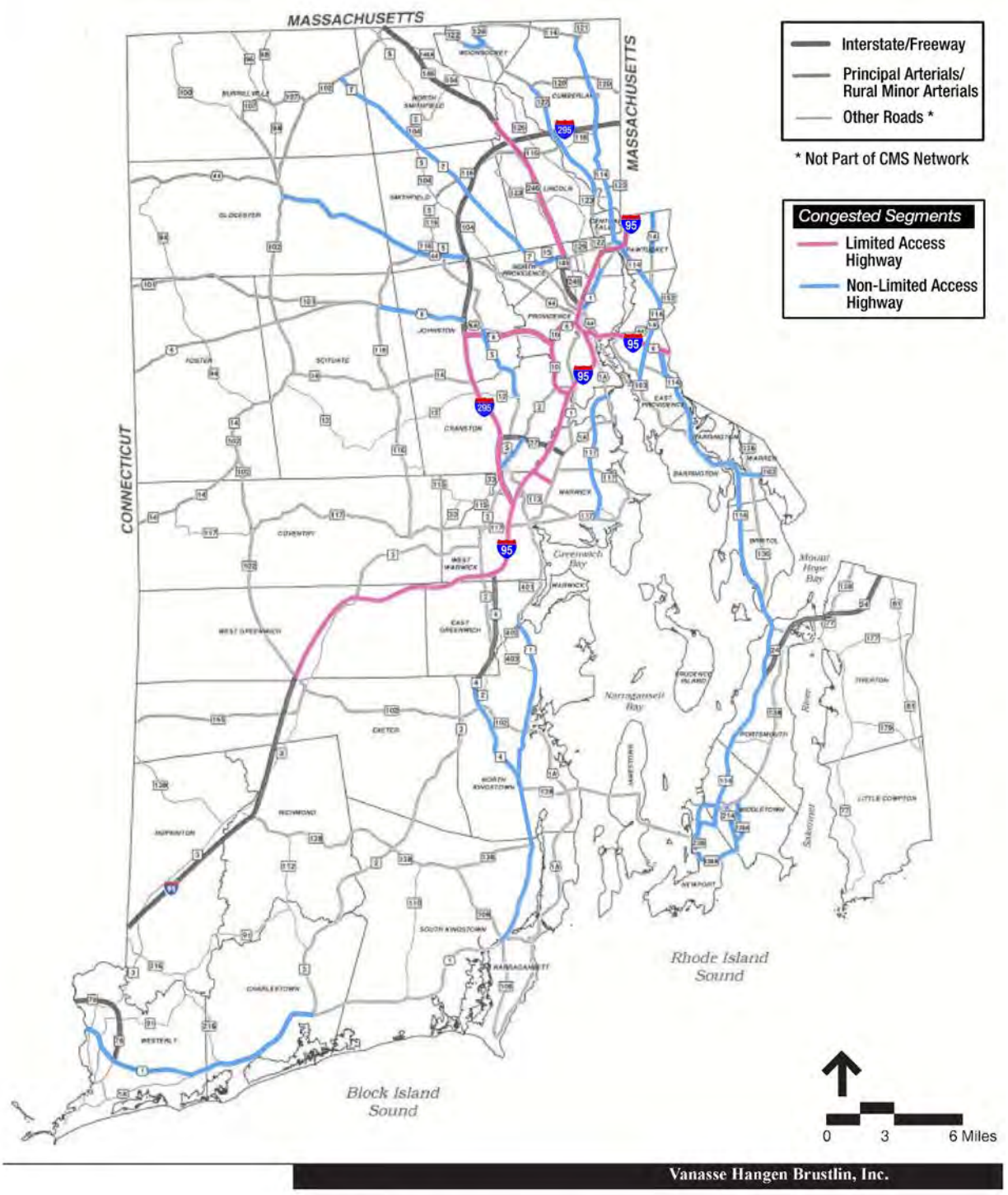
MAP 1-5 POPULATION CHANGE, 2000-2010



MAP 1-6 CENSUS TRACT MEAN TRAVEL TIME TO WORK, 2010



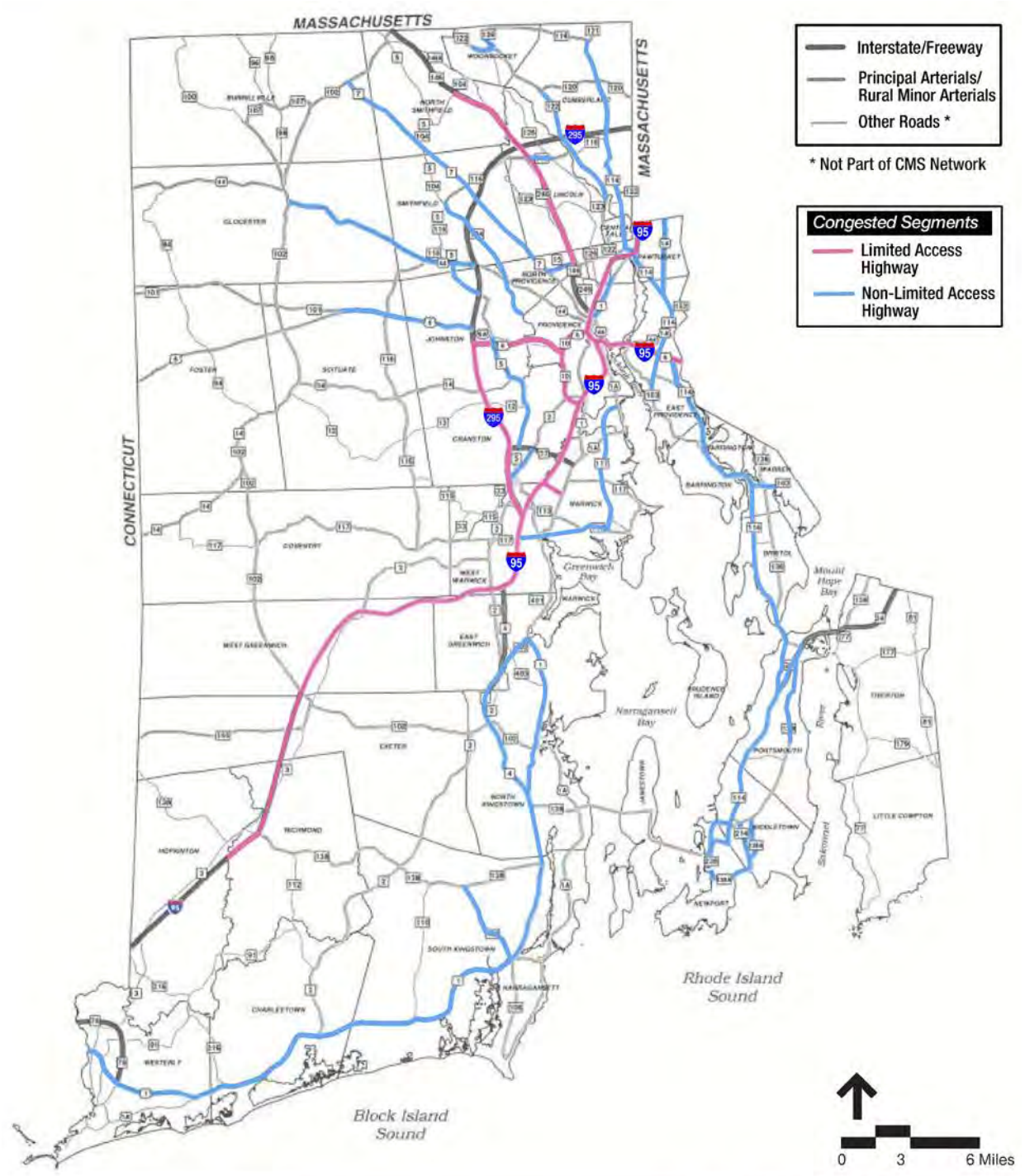
MAP 1-7 CONGESTED HIGHWAYS 2012



Peak Period Congestion
Based on 2012 TRANSCAD Model Run
For Speeds and V/C Ratios

Figure

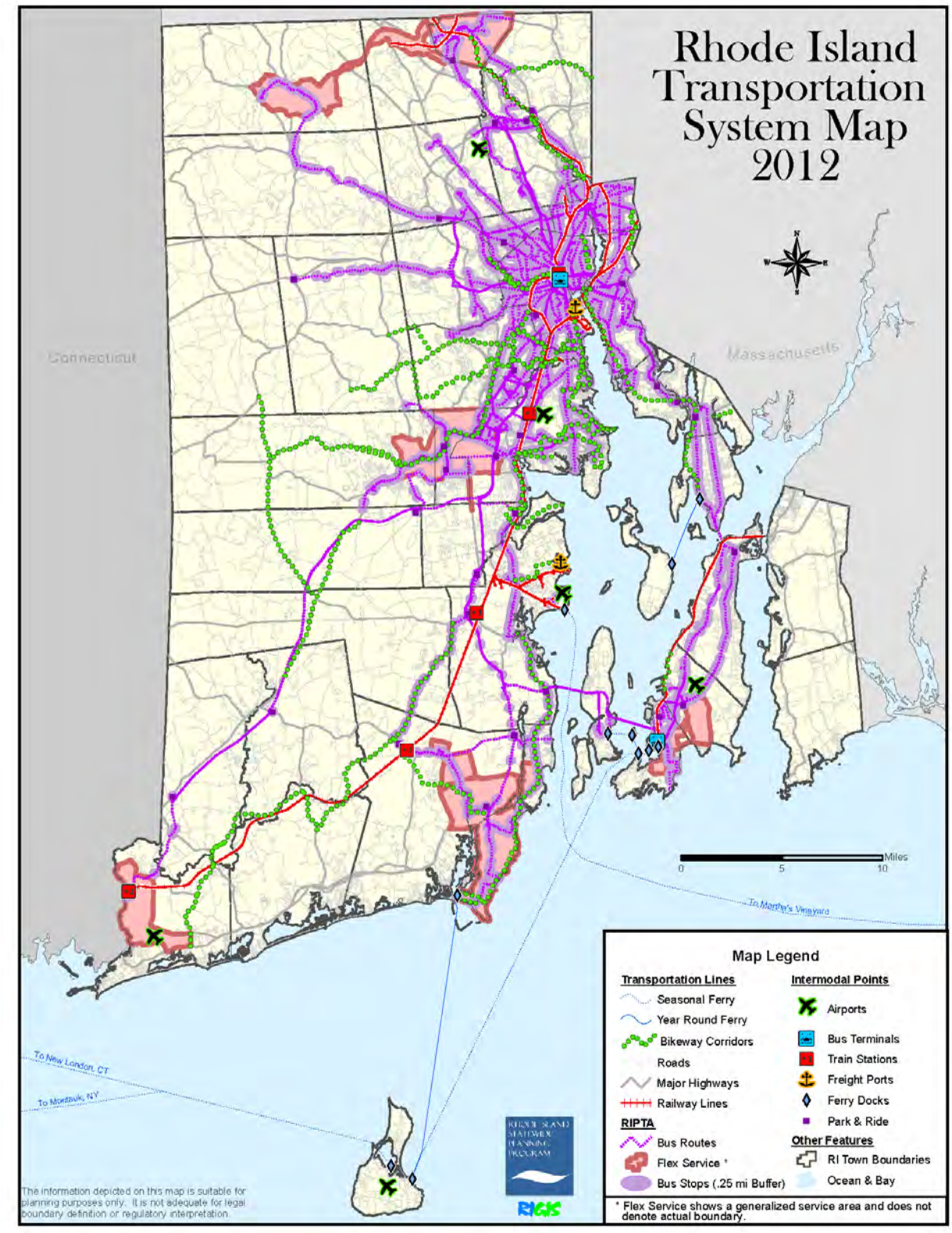
MAP 1-8 CONGESTED HIGHWAYS 2035



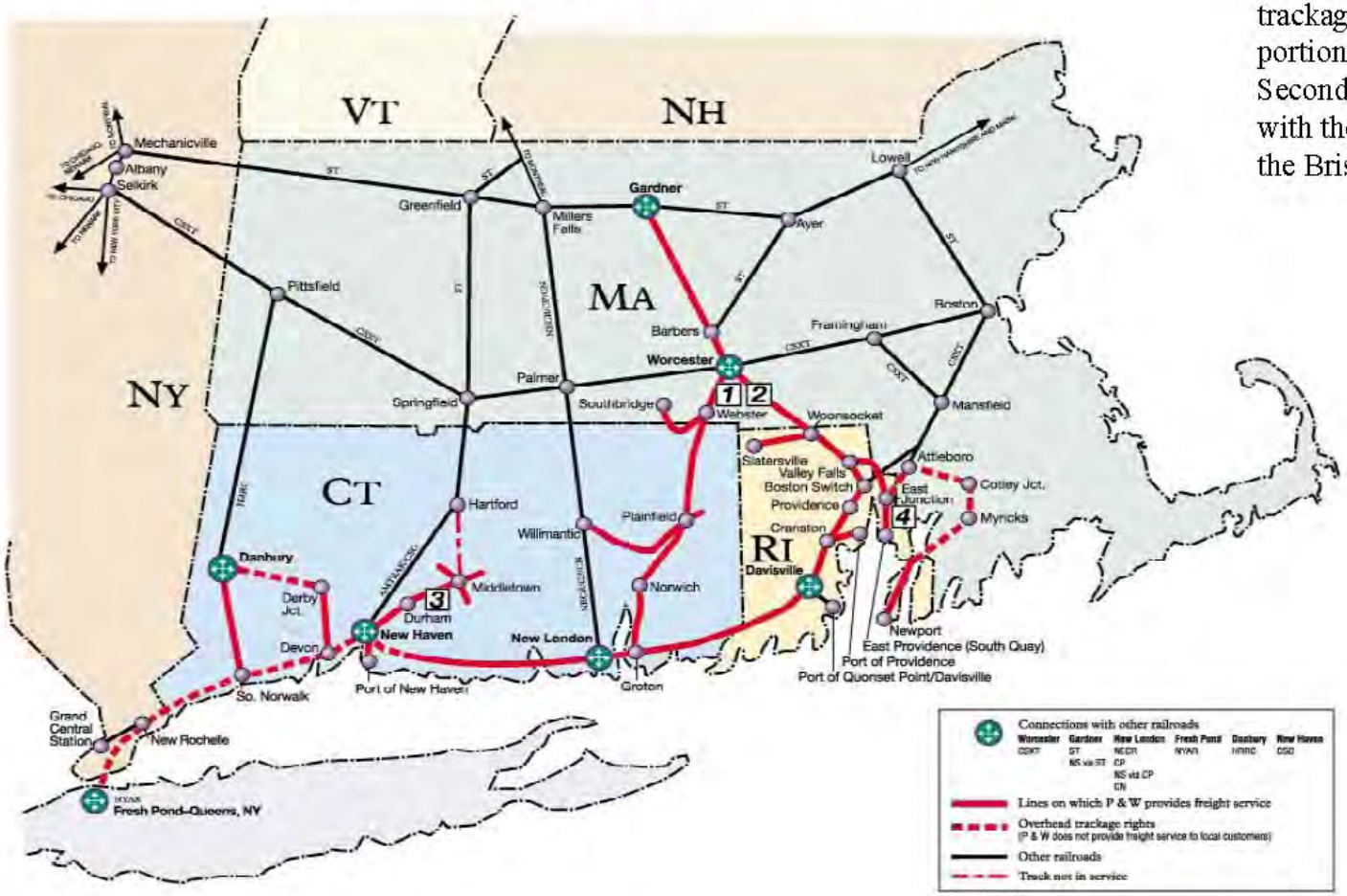
Peak Period Congestion
Based on 2035 TRANSCAD Model Run
Without Interstate Capacity Expansion

Figure

MAP 2-1 TRANSPORTATION FACILITIES SYSTEM MAP, 2012



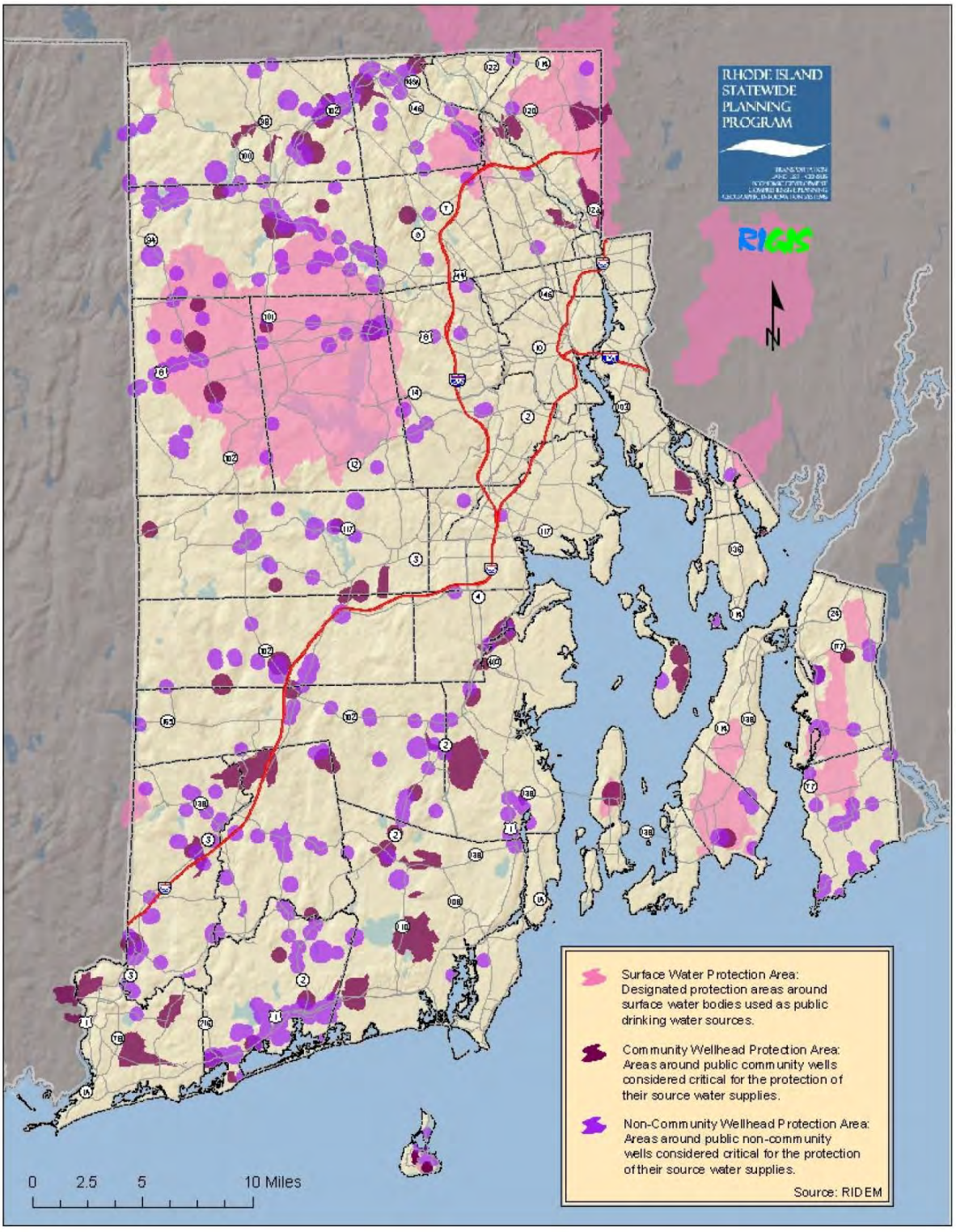
MAP 2-2 SOUTHERN NEW ENGLAND FREIGHT LINES, 2008



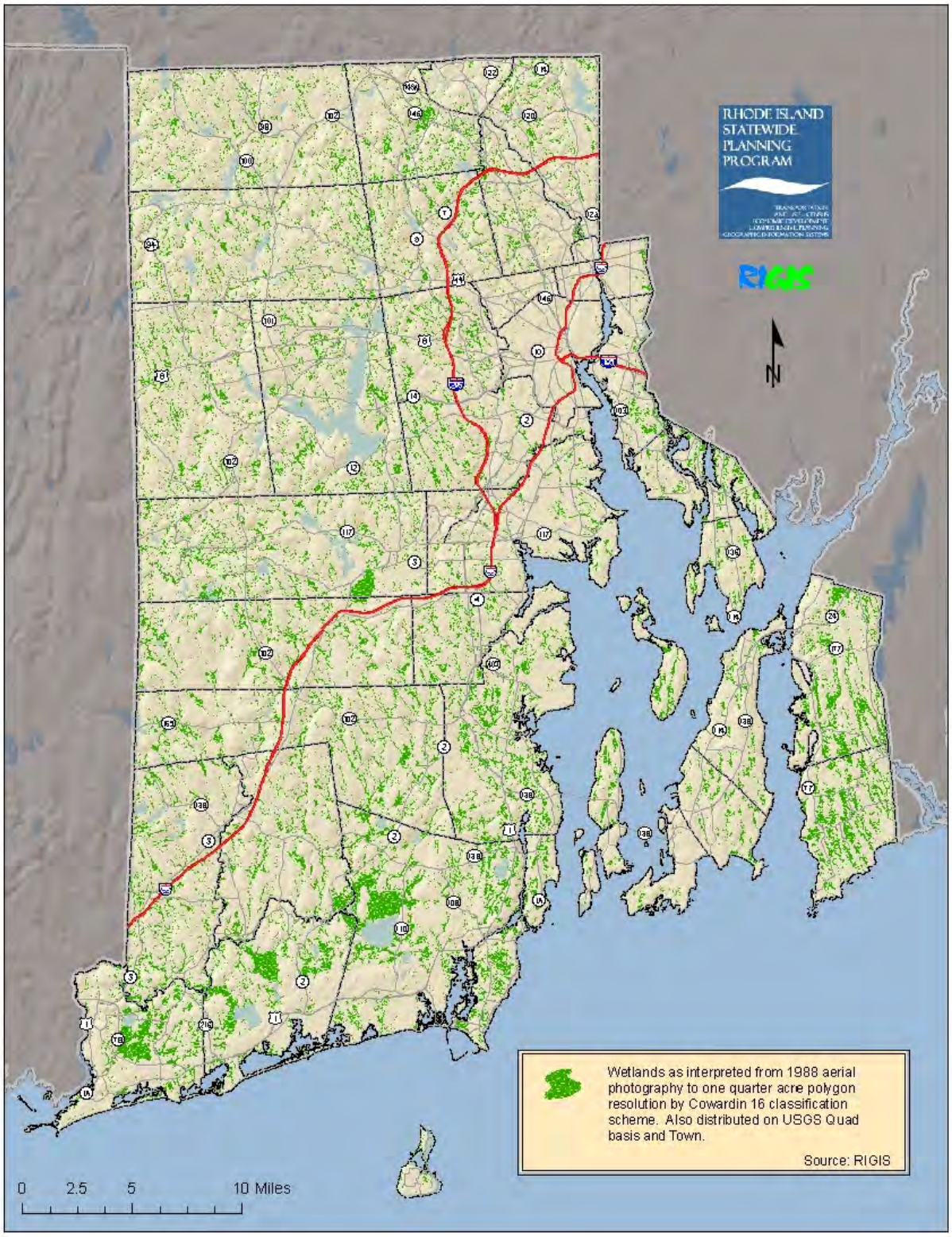
* The P&W has abandoned freight trackage rights along the southern portion of the East Providence Secondary Track from its intersection with the East Junction Track south to the Bristol Secondary Track (East Bay

Property of P& W Railroad

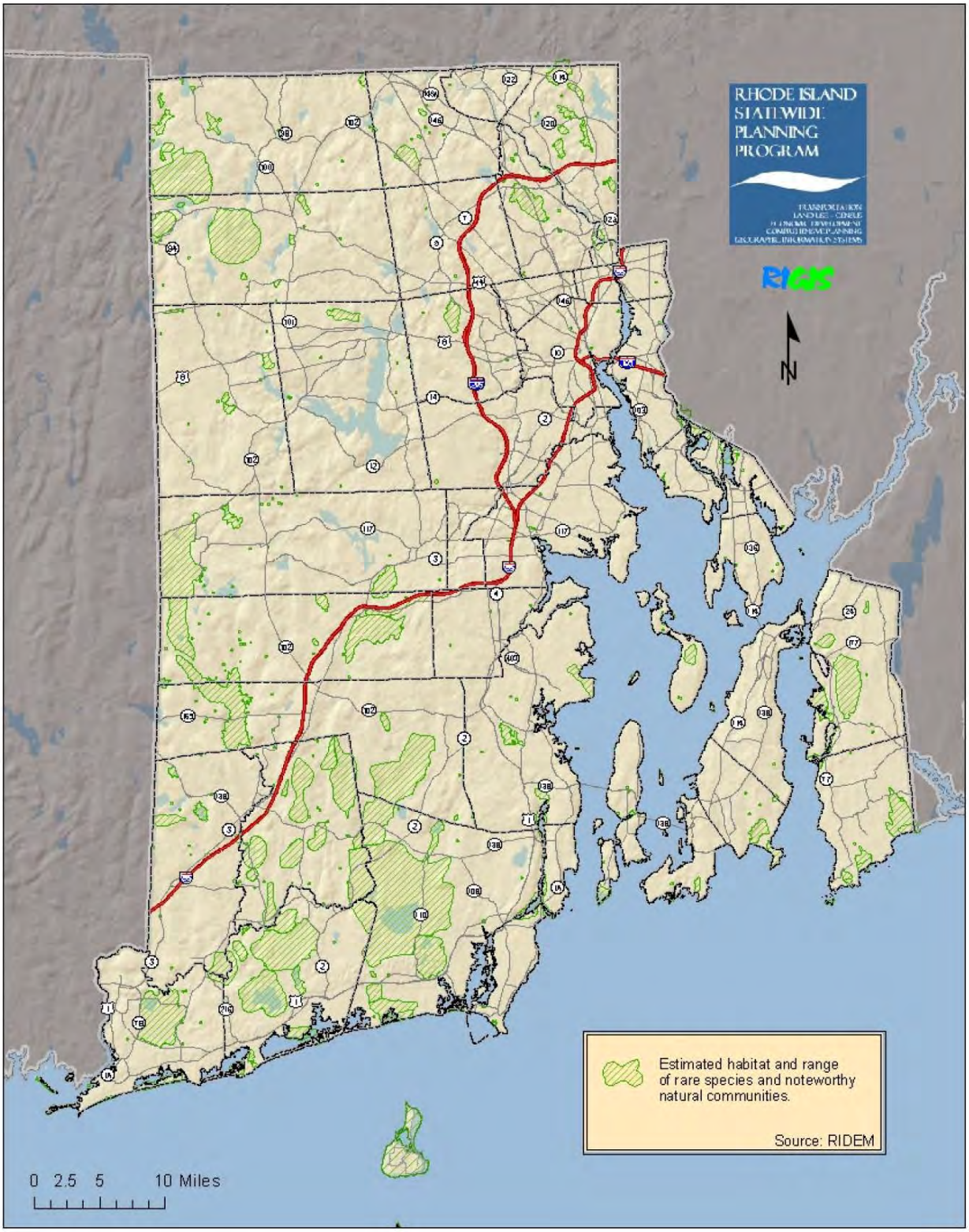
MAP 4-1 WATER SUPPLY AND WELLHEAD PROTECTION AREAS, 2008



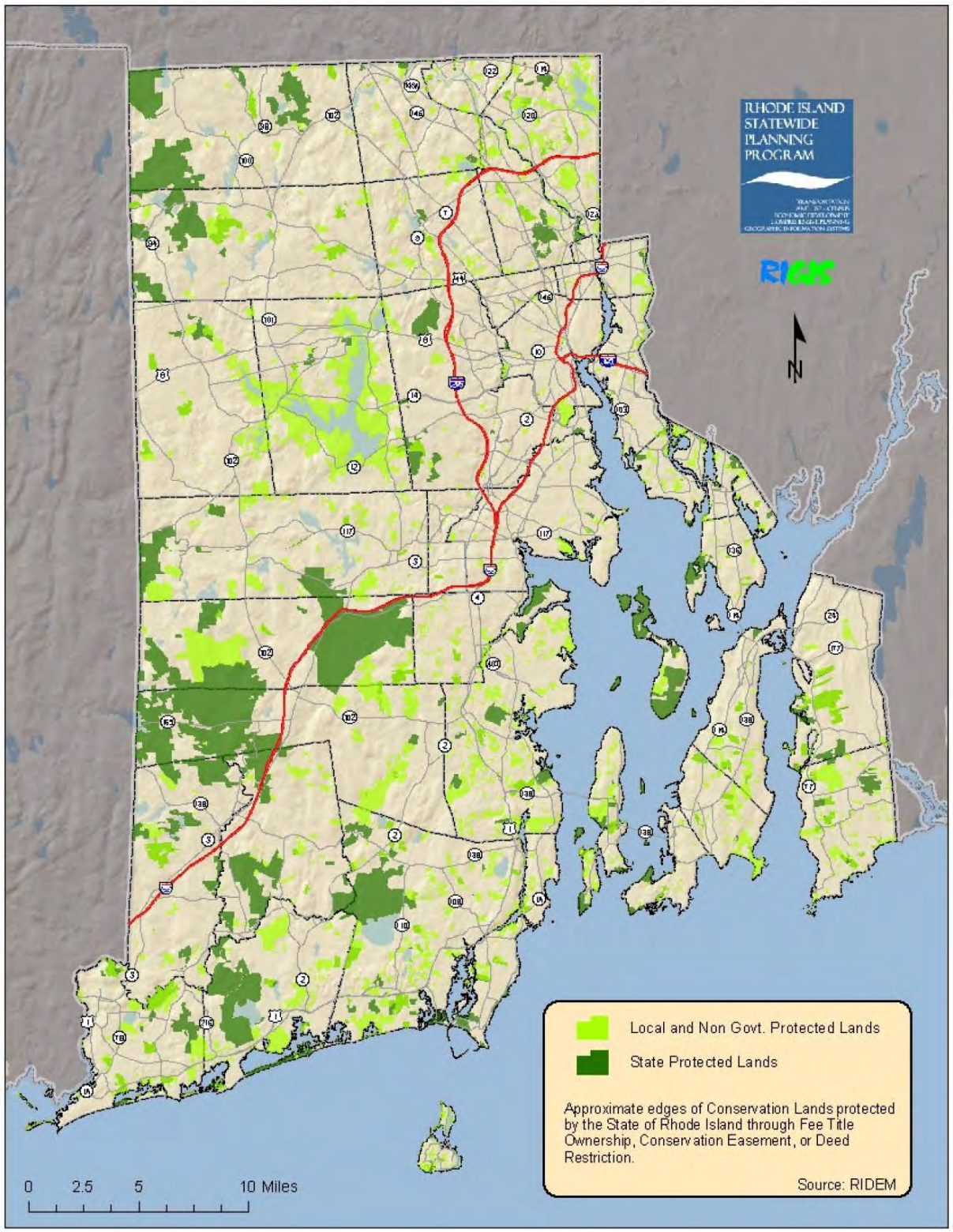
MAP 4-2 WETLANDS, 2008


RHODE ISLAND
STATEWIDE
PLANNING
PROGRAM
RIGIS
N
Wetlands as interpreted from 1988 aerial photography to one quarter acre polygon resolution by Cowardin 16 classification scheme. Also distributed on USGS Quad basis and Town.
Source: RIGIS
0 2.5 5 10 Miles

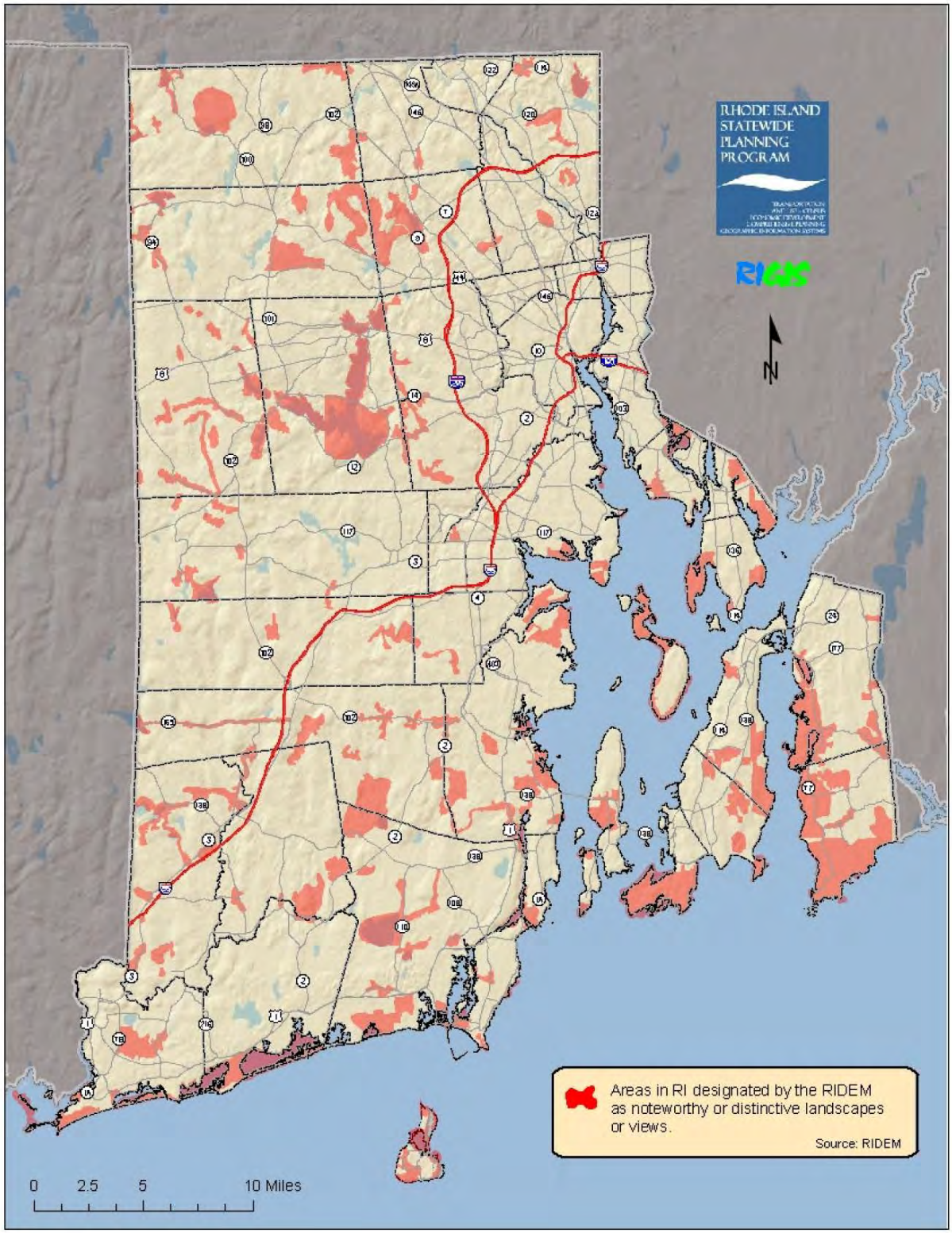
MAP 4-3 RARE SPECIES HABITATS, 2008



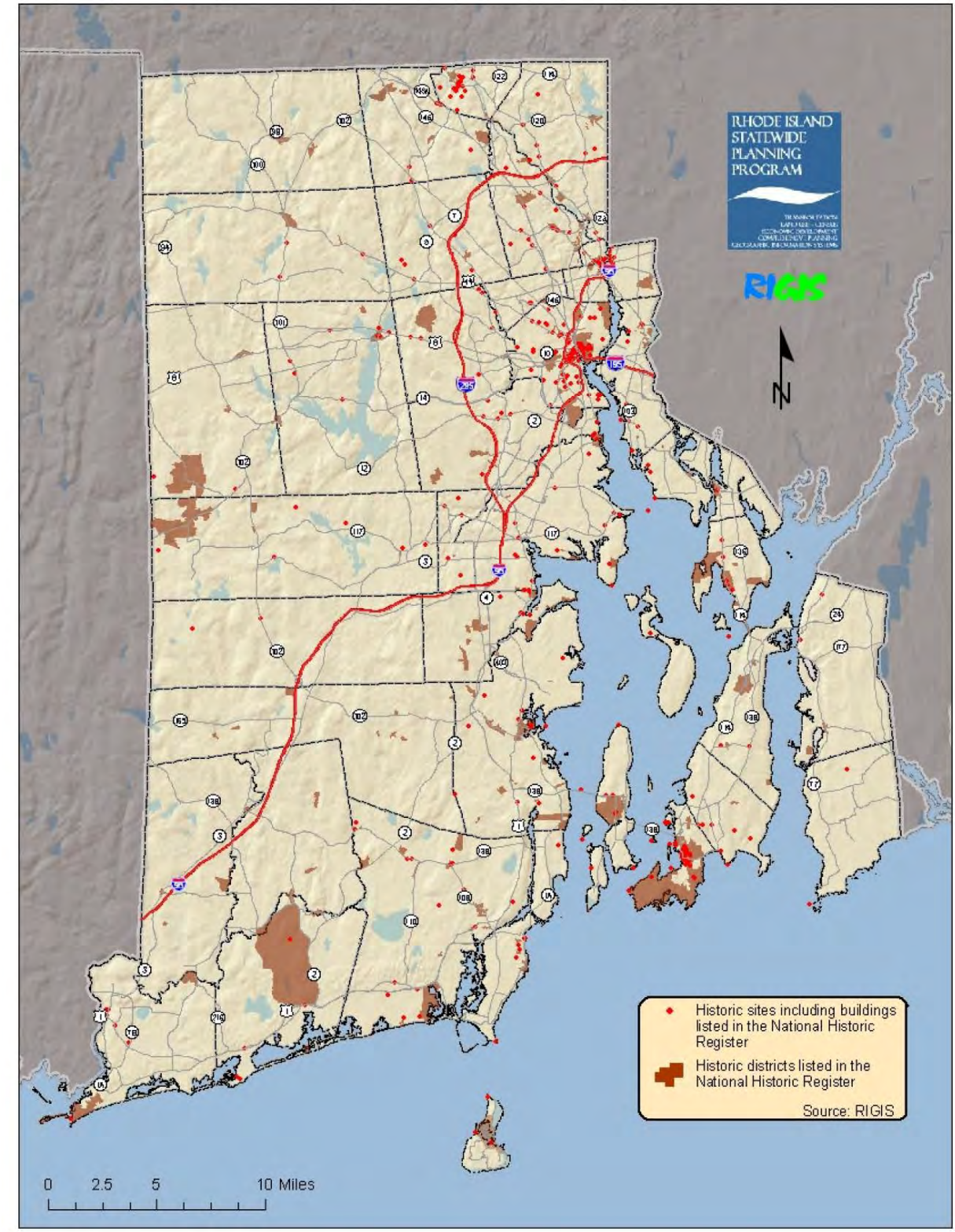
MAP 4-3 PROTECTED CONSERVATION AND PARK LANDS, 2008


RHODE ISLAND
STATEWIDE
PLANNING
PROGRAM
RIGIS
N
Local and Non Govt. Protected Lands
State Protected Lands
Approximate edges of Conservation Lands protected by the State of Rhode Island through Fee Title Ownership, Conservation Easement, or Deed Restriction.
Source: RIDEM
0 2.5 5 10 Miles

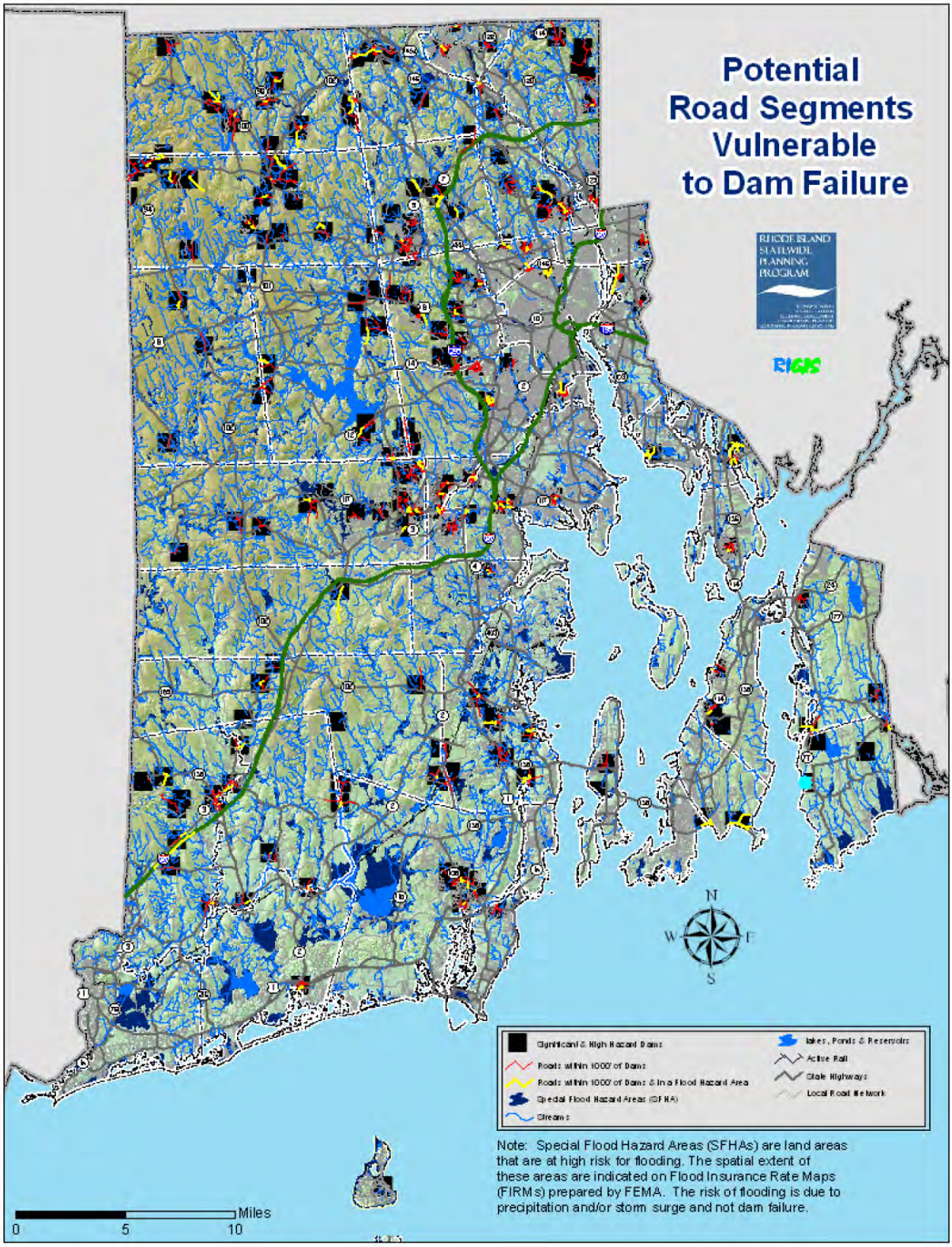
MAP 4-5 DESIGNATED SCENIC AREAS, 2008



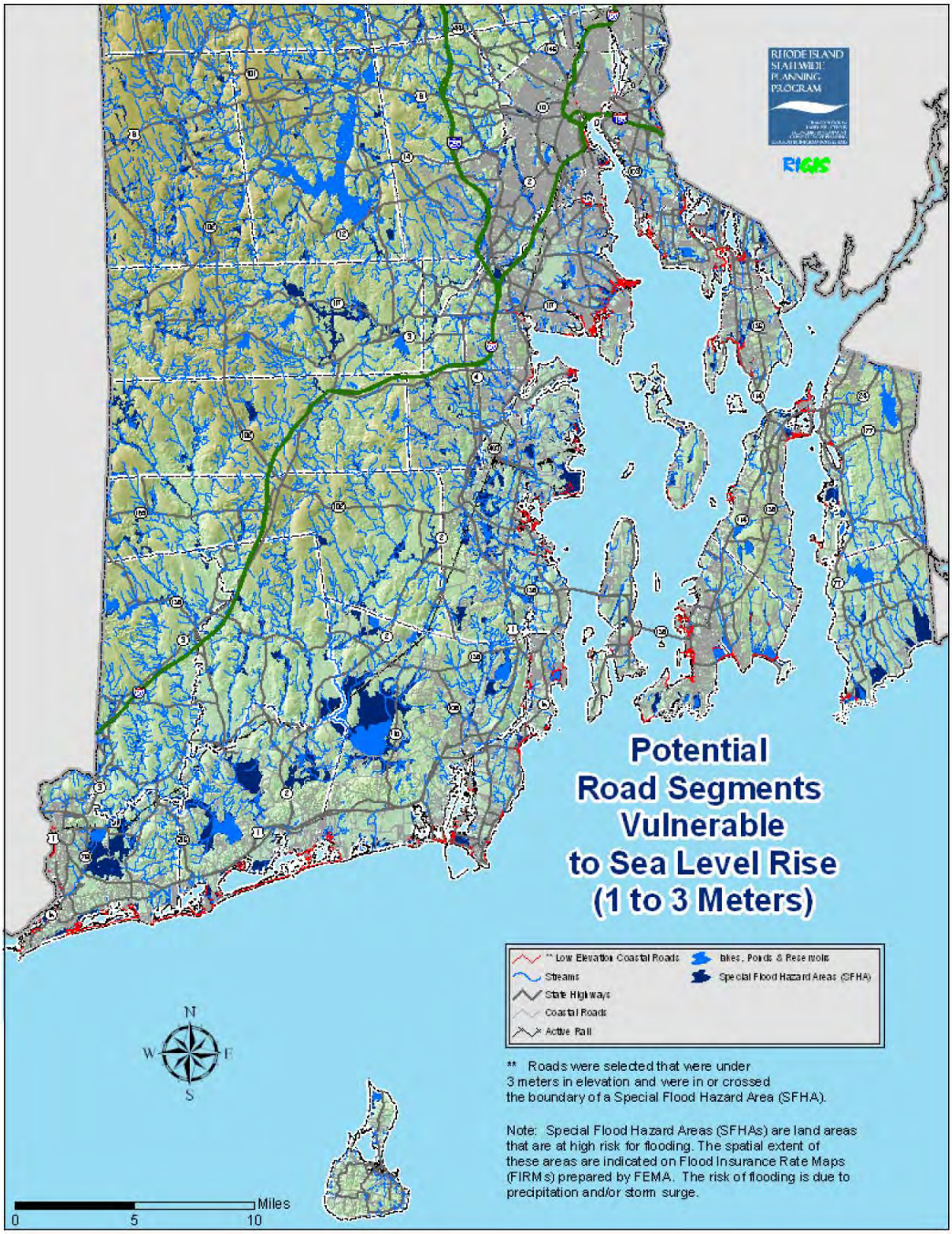
MAP 4-6 HISTORIC SITES AND DISTRICTS, 2008



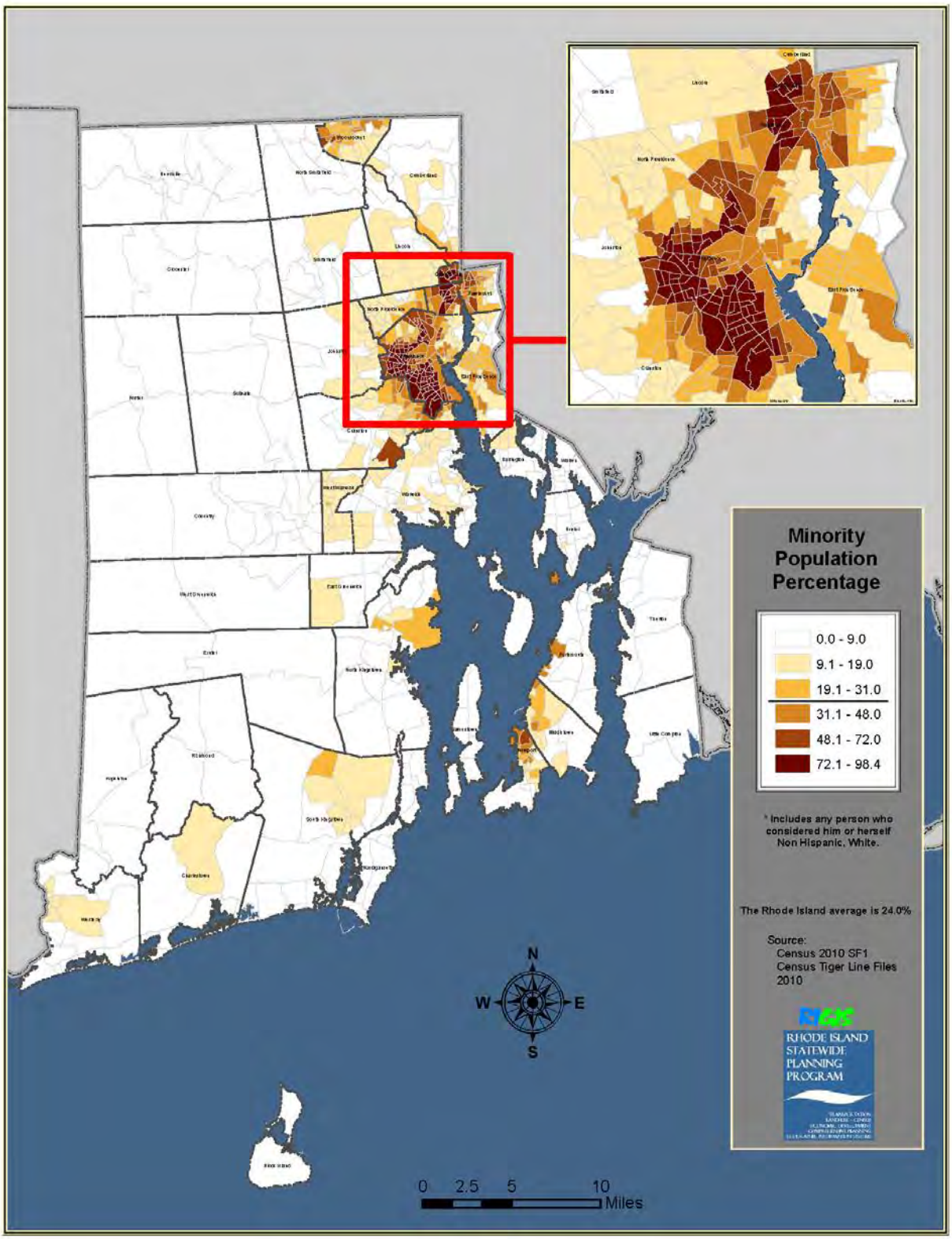
MAP 4-7 ROADS THREATENED BY DAM FAILURE, 2008


Potential
Road Segments
Vulnerable
to Dam Failure
RHODE ISLAND
STATEWIDE
PLANNING
PROGRAM
RIGIS
N
W
E
S
Significant & High Hazard Dams
Roads within 1000' of Dams
Roads within 1000' of Dams & in a Flood Hazard Area
Special Flood Hazard Areas (SFHA)
Streams
Lakes, Ponds & Reservoirs
Active Rail
State Highways
Local Road Network
Note: Special Flood Hazard Areas (SFHAs) are land areas that are at high risk for flooding. The spatial extent of these areas are indicated on Flood Insurance Rate Maps (FIRMs) prepared by FEMA. The risk of flooding is due to precipitation and/or storm surge and not dam failure.
Miles
0
5
10

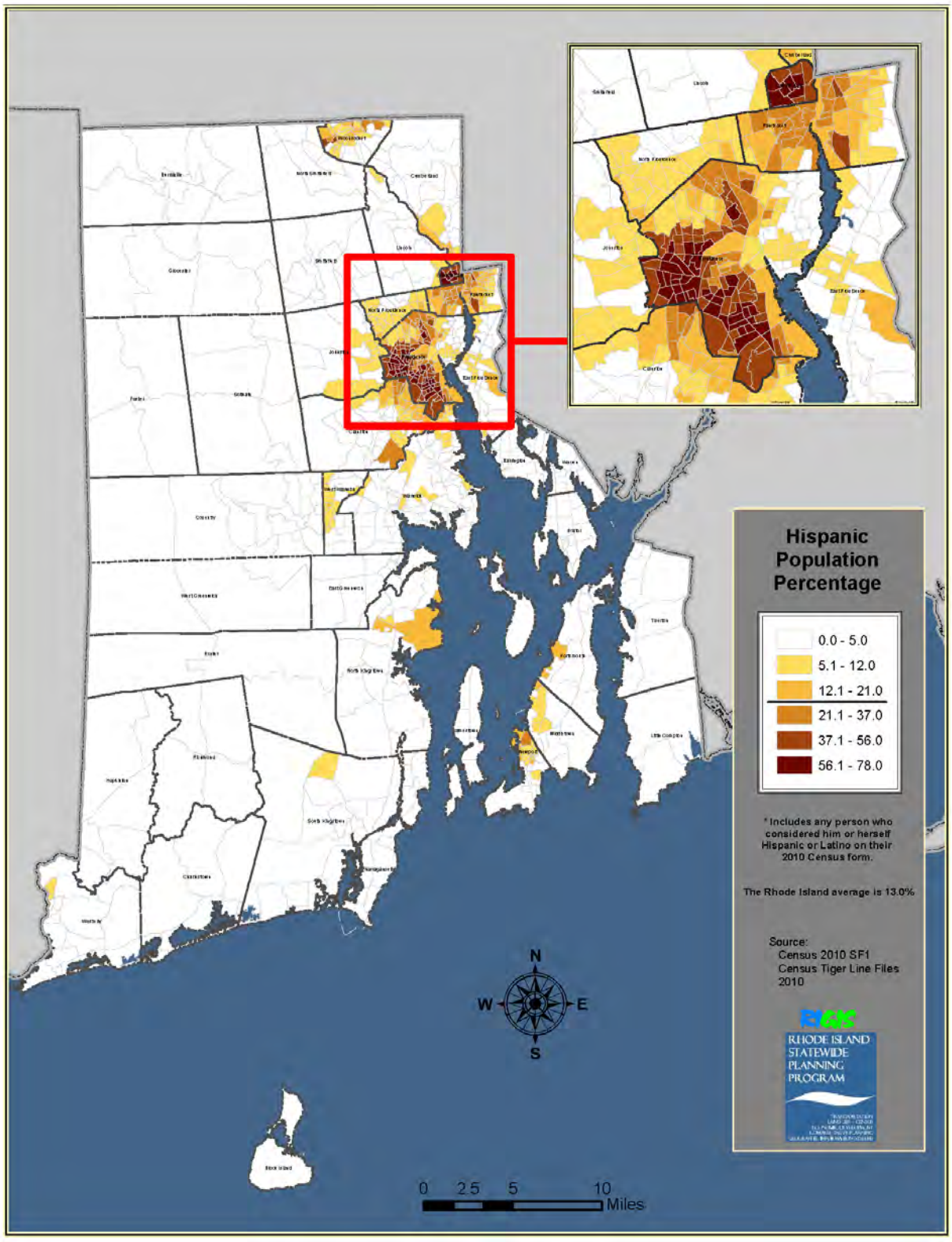
MAP 4-8 SEA LEVEL RISE (1-3 METERS), 2008


RHODE ISLAND STATEWIDE PLANNING PROGRAM
RIGIS
Potential Road Segments Vulnerable to Sea Level Rise (1 to 3 Meters)
** Low Elevation Coastal Roads
Streams
State Highways
Coastal Roads
Active Rail
lakes, Ponds & Reservoirs
Special Flood Hazard Areas (SFHA)
** Roads were selected that were under 3 meters in elevation and were in or crossed the boundary of a Special Flood Hazard Area (SFHA).
Note: Special Flood Hazard Areas (SFHAs) are land areas that are at high risk for flooding. The spatial extent of these areas are indicated on Flood Insurance Rate Maps (FIRMs) prepared by FEMA. The risk of flooding is due to precipitation and/or storm surge.
N
W
E
S
Miles
0
5
10

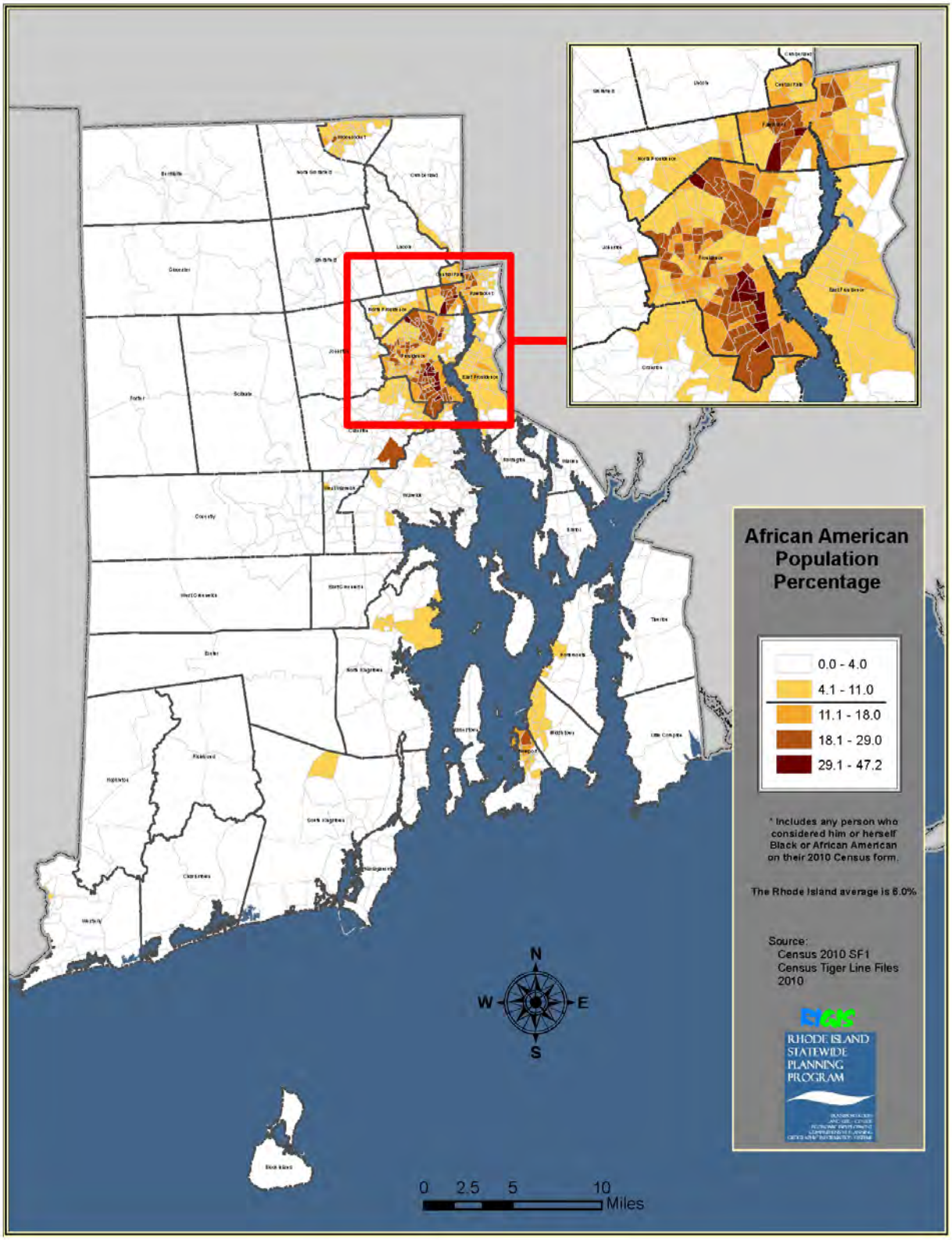
MAP 4-9A MINORITY POPULATION PERCENTAGE, 2010



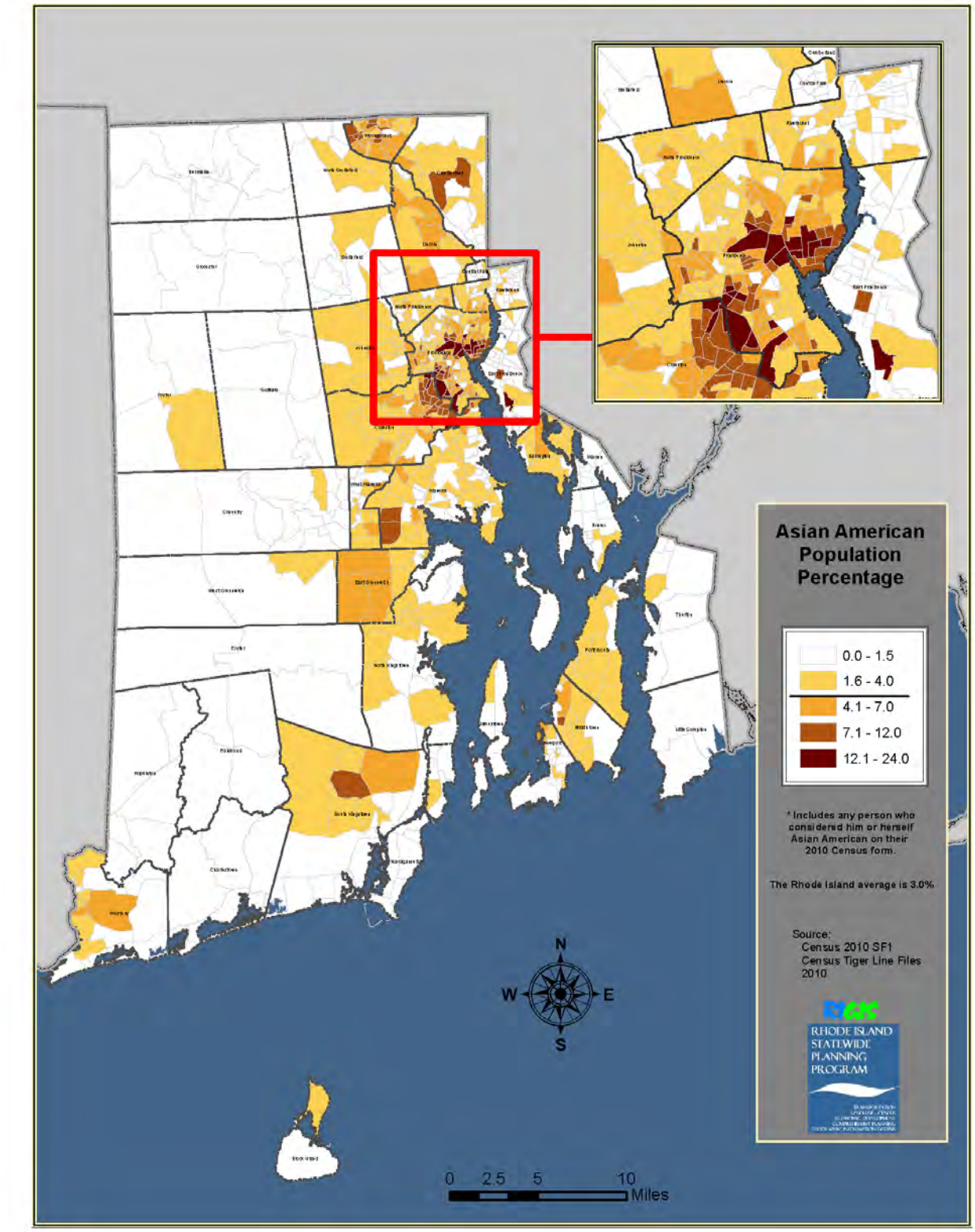
MAP 4-9 HISPANIC POPULATION, 2010



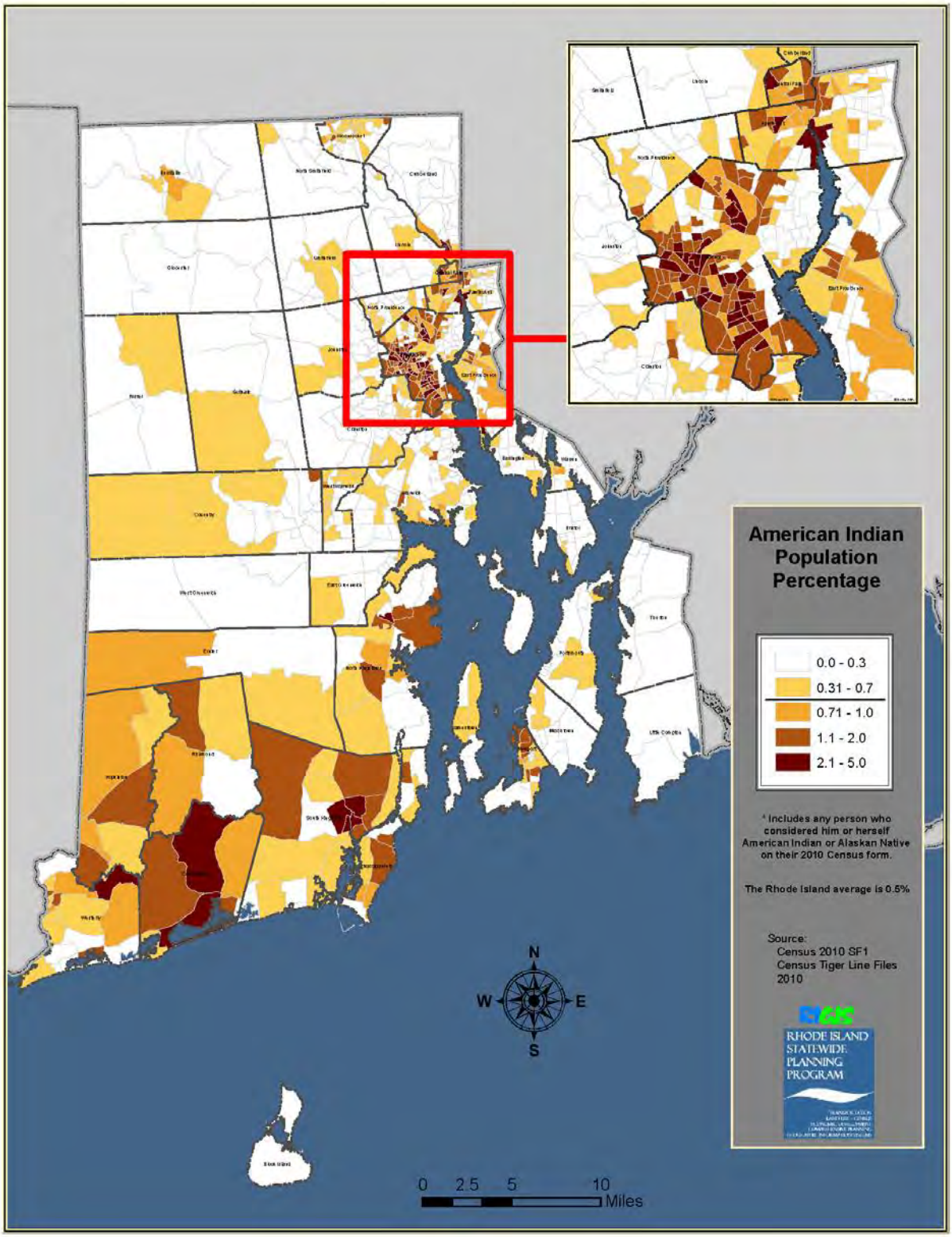
MAP 4-10 AFRICAN AMERICAN POPULATION, 2010



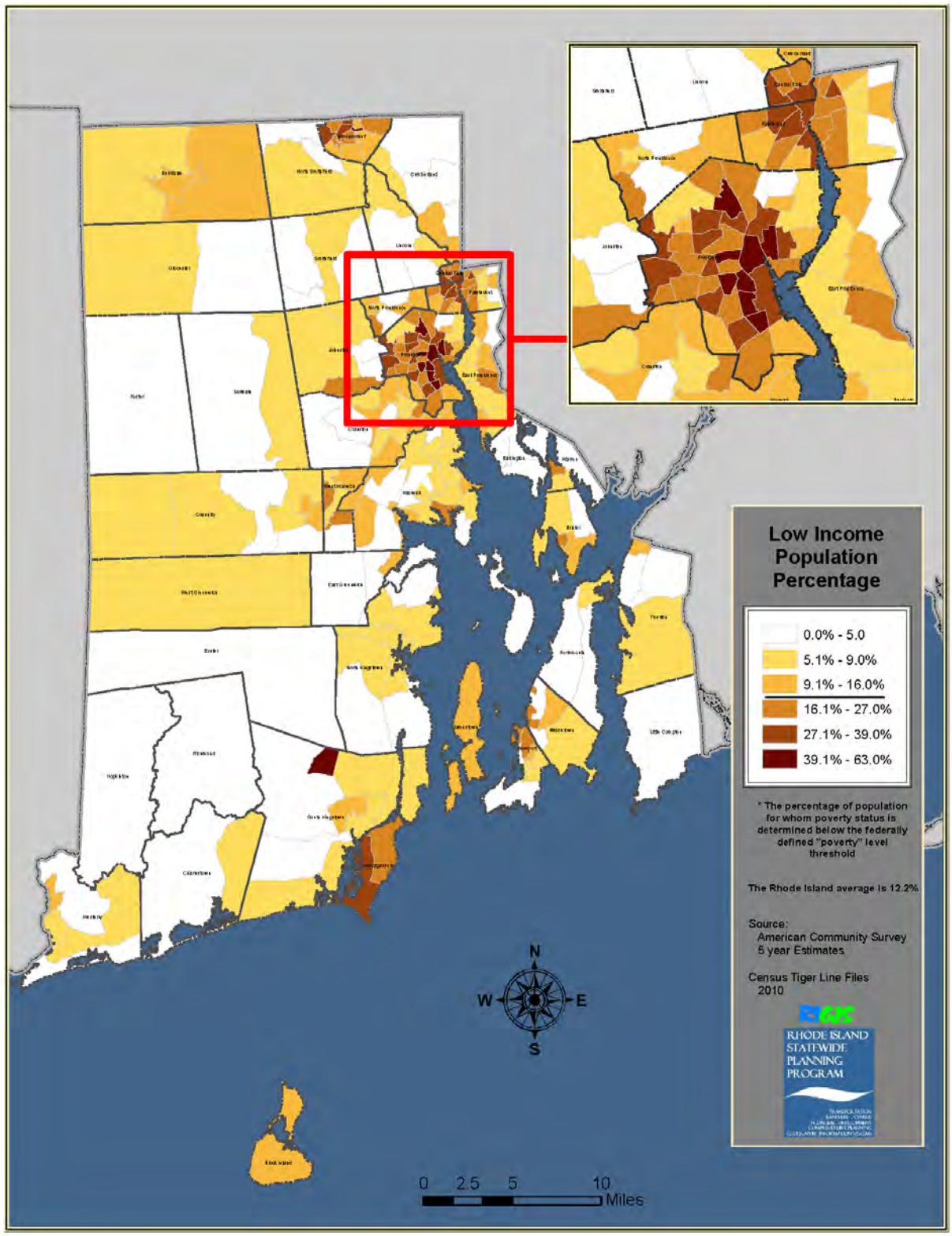
MAP 4-11 ASIAN POPULATION, 2010



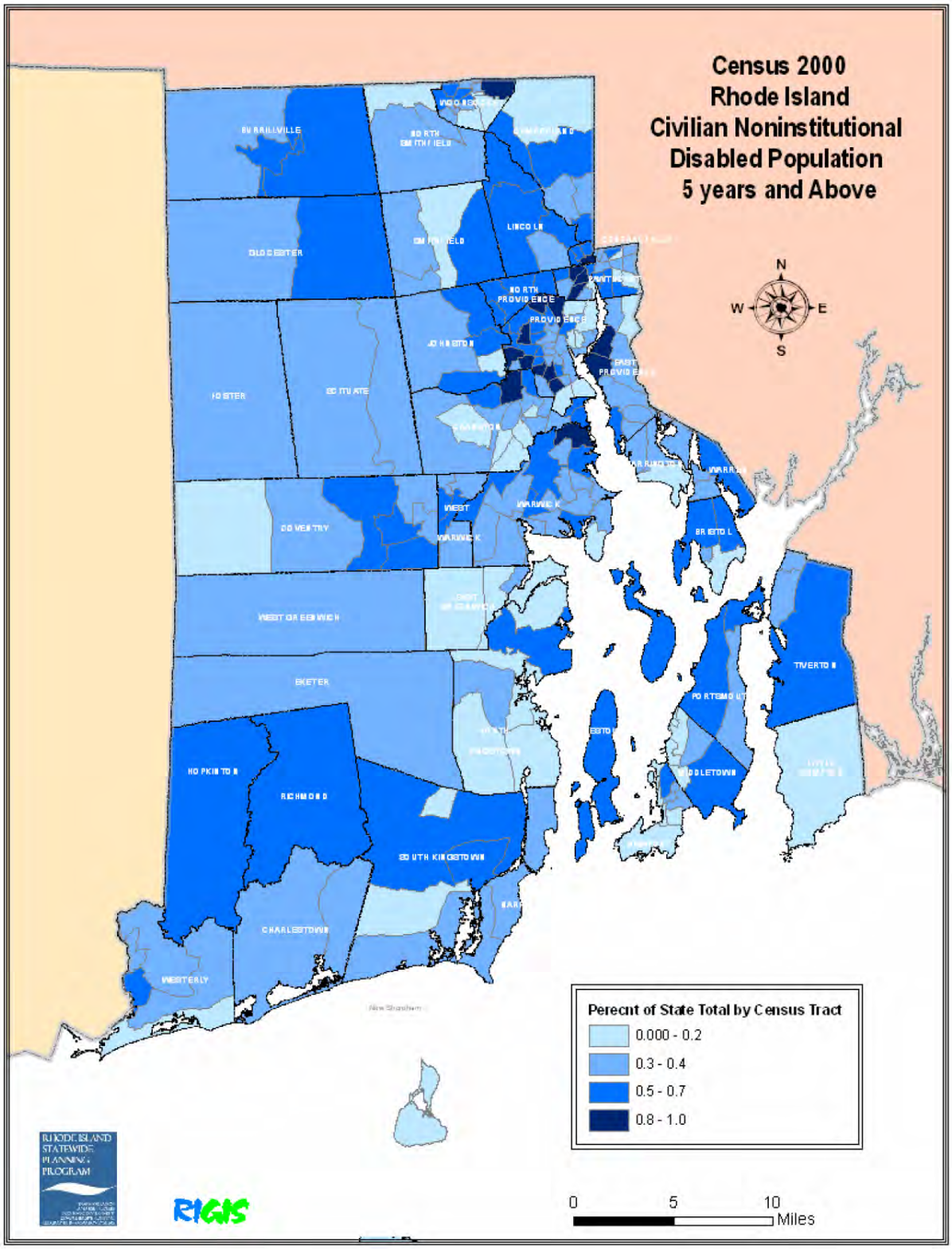
MAP 4-12 AMERICAN INDIAN POPULATION, 2010



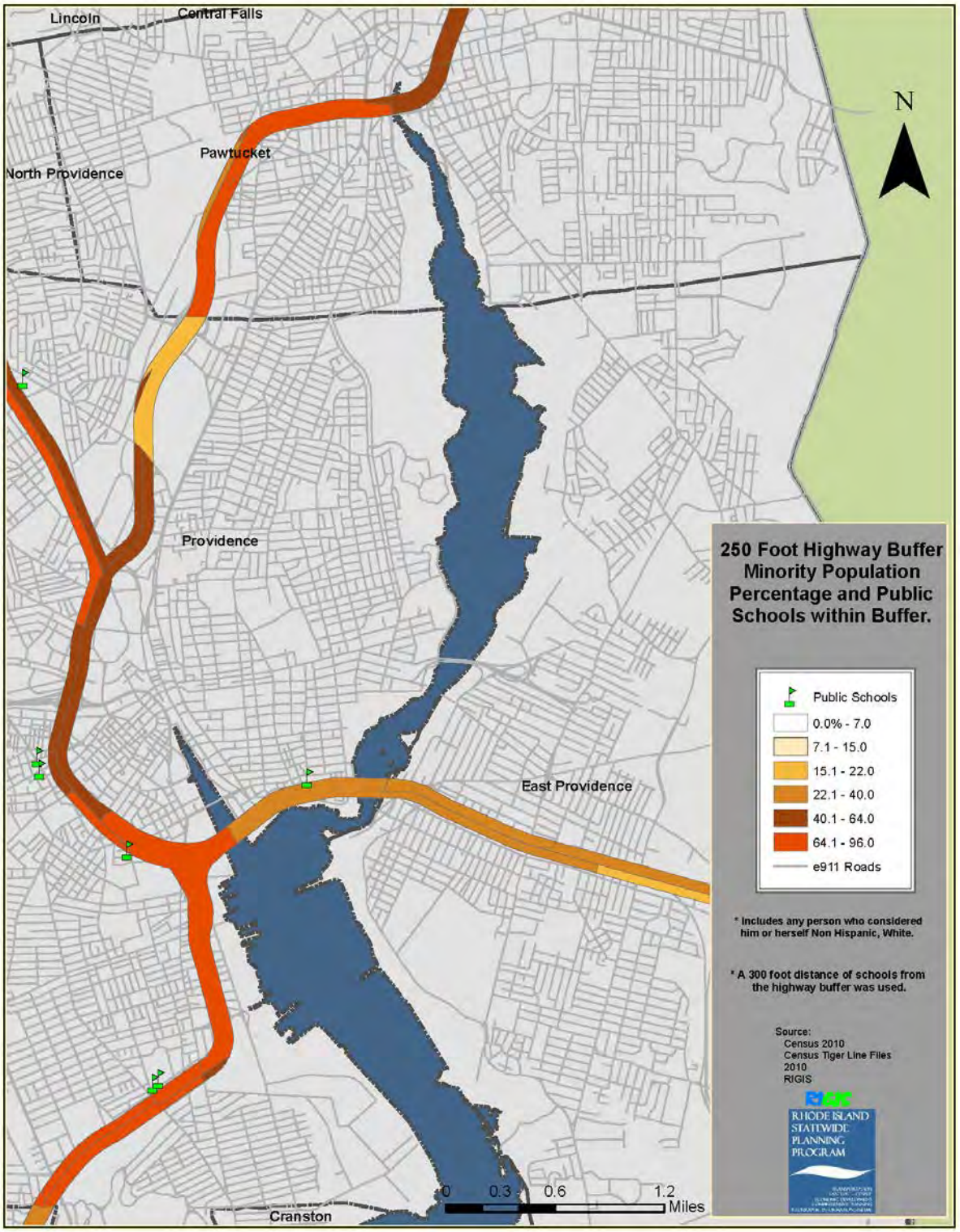
MAP 4-13 LOW INCOME POPULATION, 2010



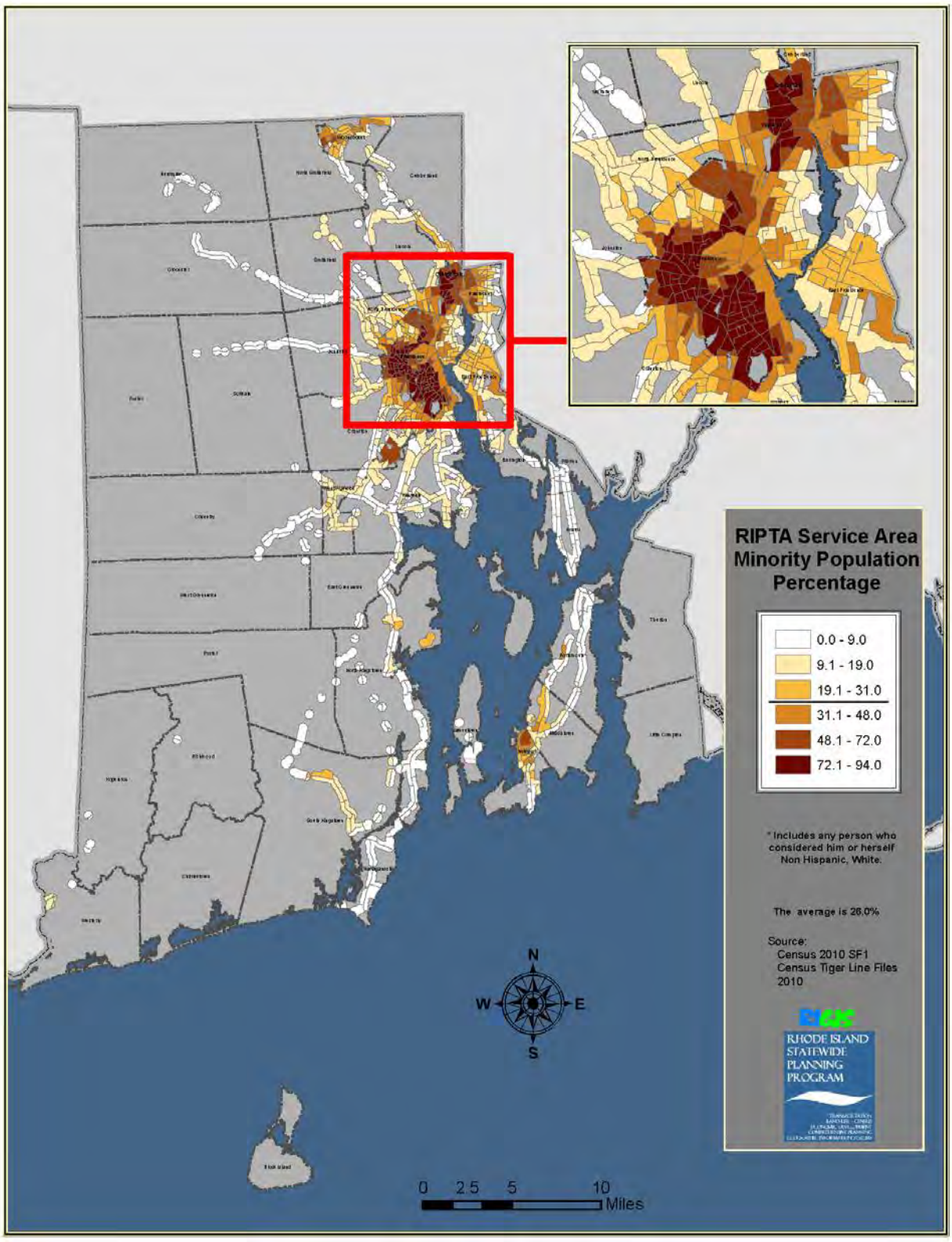
MAP 4-14 DISABLED POPULATION, 2000



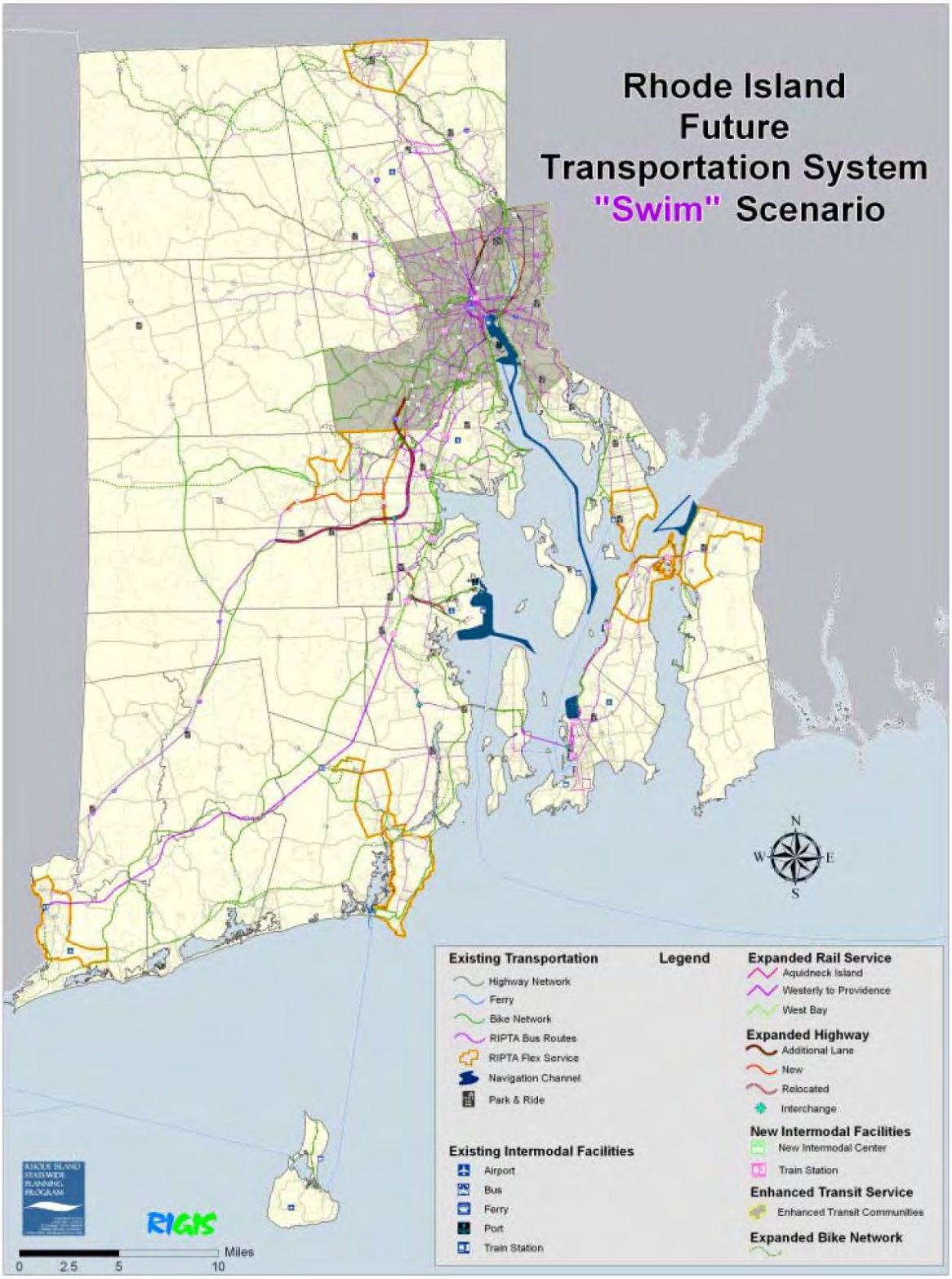
MAP 4-15 ENVIRONMENTAL JUSTICE POPULATIONS AND SCHOOLS WITHIN 250' OF INTERSTATES AND HIGHWAYS, 2010



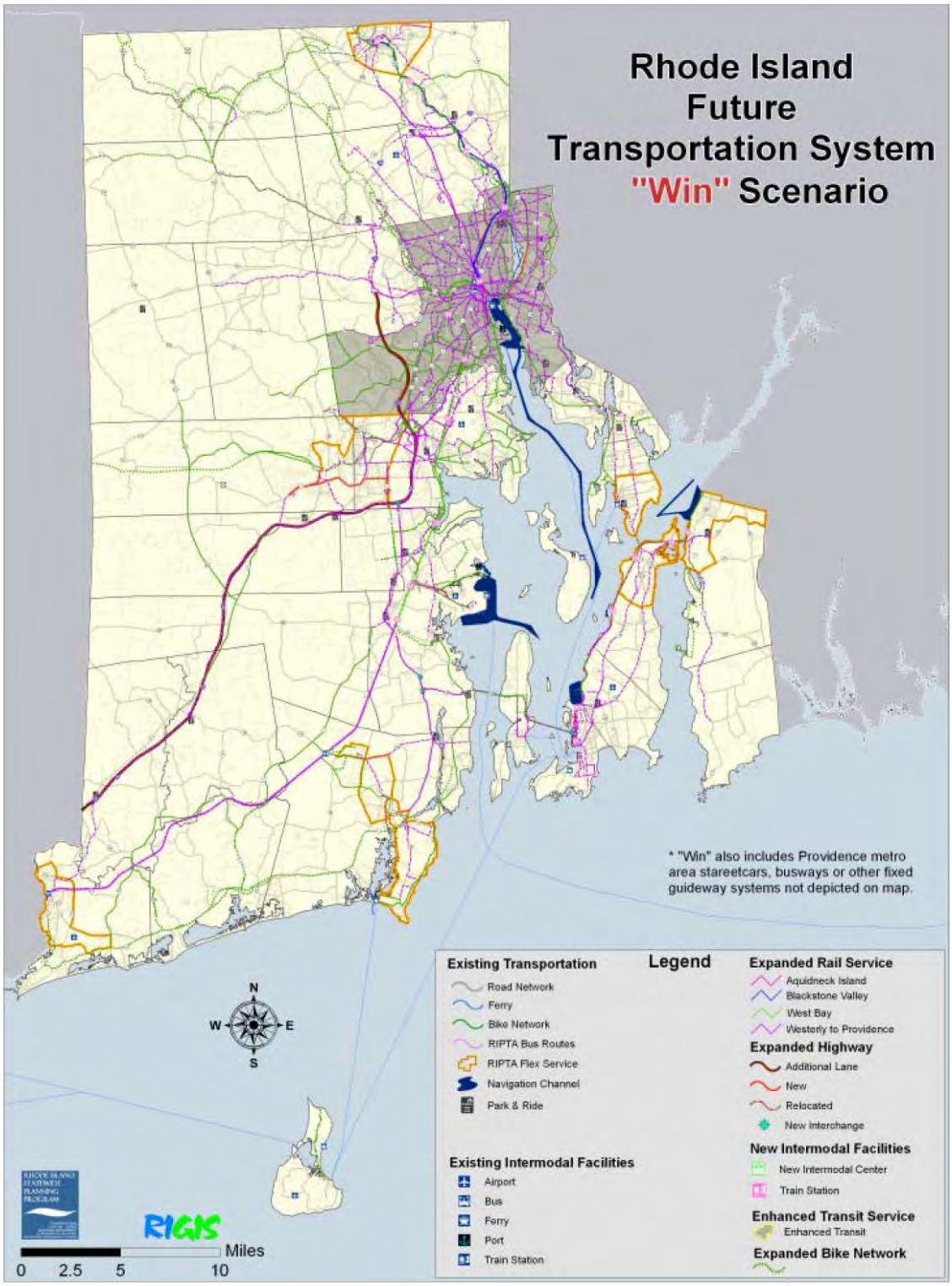
MAP 4-16 CASE STUDY: MINORITY POPULATIONS WITHIN ¼ MILE OF RIPTA SERVICE AREA, 2010



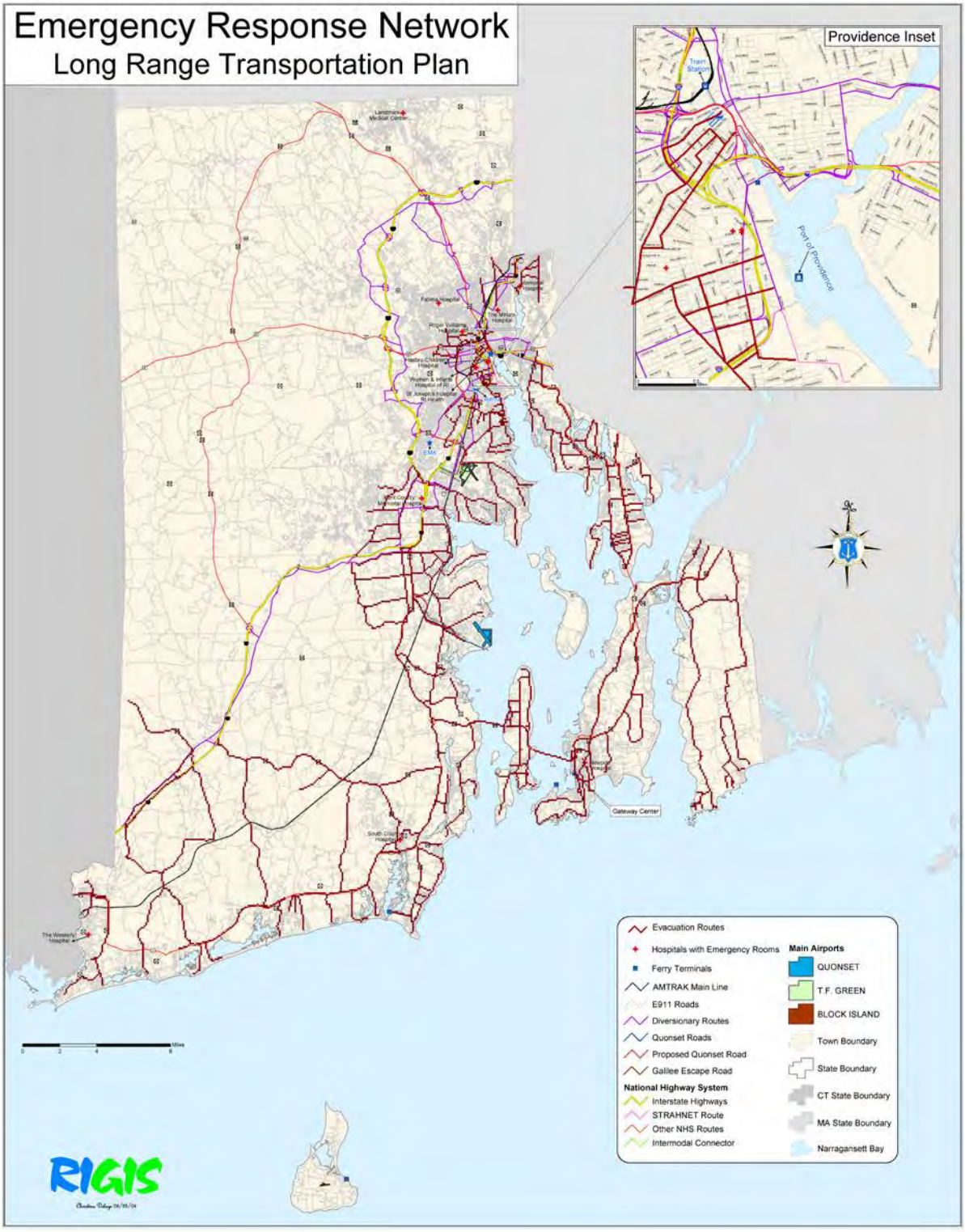
MAP 5-1 FUTURE TRANSPORTATION SYSTEM "SWIM SCENARIO" 2008



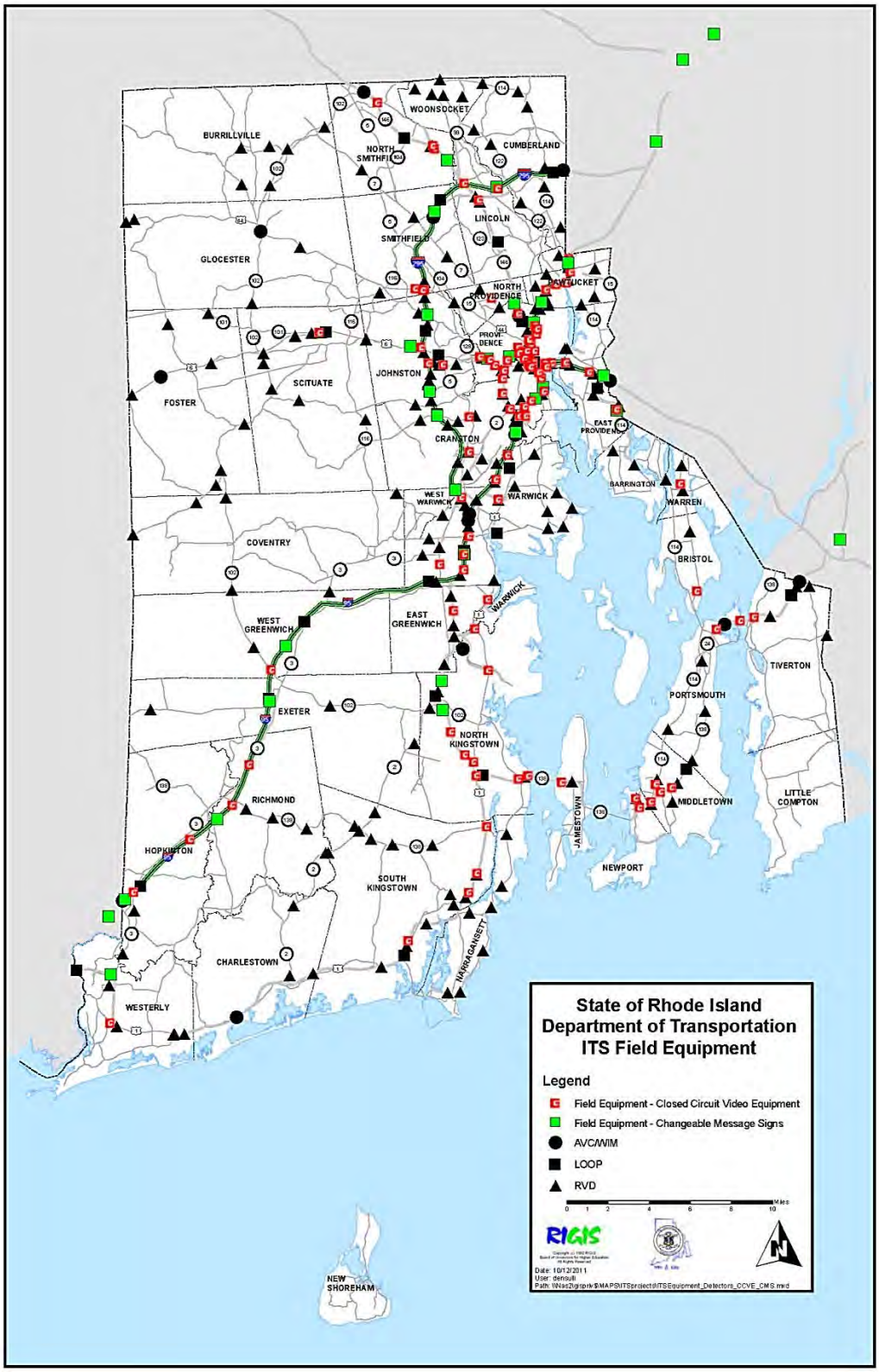
FUTURE TRANSPORTATION SYSTEM "WIN SCENARIO" 2008



EMERGENCY RESPONSE NETWORK MAP, 2008



MAP 5-4 INTELLIGENT TRANSPORTATION SYSTEMS, 2012



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 1
5 Post Office Square, Suite 100
Boston, MA 02109-3912

December 12, 2012

Mr. Daniel J. Berman, Division Administrator (Acting)
U.S. Federal Highway Administration
380 Westminster Mall, Room 547
Providence, RI 02903

RE: Rhode Island Transportation Conformity Air Quality Analysis;
Rhode Island Long Range Transportation Plan 2035 Update

Dear Mr. Berman:

On November 9, 2012, EPA Region 1 received a copy of the "Rhode Island Long Range Transportation Plan 2035 Update, Air Quality Report," dated November 2012.

EPA Region 1's Air Quality Planning Unit has conducted a review of the submitted air quality conformity analysis in accordance with EPA's Transportation Conformity Rule as amended. We believe this analysis supports U.S. DOT making a positive conformity determination for the Providence (All of RI), RI 1997 8-hour ozone nonattainment area.[1]

EPA Region 1 sent a letter to the Rhode Island Department of Environmental Management on June 16, 2008, stating that the 2008 and 2009 motor vehicle emissions budgets (MVEBs) in the Providence (All of RI), RI 1997 8-hour ozone nonattainment area are adequate. Rhode Island submitted the budgets on April 30, 2008, as part of its 1997 8-hour ozone attainment demonstration and reasonable further progress plan. These budgets were announced on EPA's conformity web site, and received no comments. These conformity budgets became effective for conformity determinations on July 15, 2008. (See 73 FR 36862; June 30, 2008.) The 2008 and 2009 MVEBs, in tons per summer day (tpsd), for volatile organic compounds (VOC) and oxides of nitrogen (NOx) for the Providence (All of RI), RI, ozone area are as follows:

[1] In March 2008, EPA revised the National Ambient Air Quality Standards (NAAQS) for ozone. Effective July 20, 2012, the entire State of Rhode Island is designated as attaining the new 2008 8-hour ozone standard (77 FR 30088; May 21, 2012). However, transportation conformity must continue to be met for the 1997 8-hour ozone standard until July 20, 2013, the date for when the 1997 8-hour ozone standard is revoked for transportation conformity purposes.

Adequate Motor Vehicle Emissions Budgets		
	Providence (All of RI), RI ozone nonattainment area	
	VOC (tpsd)	NOx (tpsd)
Year 2008	24.64	28.26
Year 2009	22.75	25.29

The air quality conformity analysis demonstrates that:

- The VOC and NOx emissions in the "Build" scenario for future years are no-greater-than the 2009 motor vehicle emissions budgets of 22.75 tpsd of VOC and 25.29 tpsd of NOx.

Providence (All of RI), RI ozone nonattainment area (Emissions in tpsd)				
Year	VOC Build Emissions	2009 VOC Motor Vehicle Emission Budget	NOx Build Emissions	2009 NOx Motor Vehicle Emission Budget
2012	11.70	22.75	15.69	25.29
2015	11.76	22.75	12.34	25.29
2025	8.58	22.75	6.34	25.29
2035	8.88	22.75	6.13	25.29

- The Transportation Improvement Program utilizes the latest planning assumptions, including the latest emission factor model required for transportation conformity purposes (MOBILE6.2)[2] and the relevant Federal, State, and Metropolitan Planning Organization have conducted the consultation process in accordance with the conformity rule.

Transportation conformity is no longer required for carbon monoxide (CO) since the entire state of Rhode Island is in attainment with the CO NAAQS and the maintenance plan period has ended.[3]

[2] Although there is a more recent emission factor model (MOVES), use of MOBILE6.2 for regional emissions analyses for transportation conformity determinations is allowed until March 2, 2013. (See 77 FR 11394; February 27, 2012.)

[3] On September 5, 1991, EPA published a final rule redesignating the Providence area to attainment status for CO (56 FR 43872). Thus, Providence became a CO maintenance area. As of September 2011, Providence's maintenance area requirements have ended, as Providence has fulfilled twenty years of compliance with the CO NAAQS.

If you or your staff have any questions regarding our comments, please feel free to call Ariel Garcia of my staff at (617) 918-1660.

Sincerely,

Anne E. Arnold

Anne E. Arnold, Manager
Air Quality Planning Unit

cc: Mary Beth Mello, FTA - Region 1, Cambridge, MA
Peter Butler, FTA - Region 1, Cambridge, MA
William Gordon, FTA - Region 1, Cambridge, MA
Barbara Breslin, FHWA – RI Division
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Frank Stevenson, RI DEM
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